The Builder.

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IN December last, as our readers will remember, Mr. Mair obtained a verdict against Mr. Ward (a gentleman residing in the Isle of Wight), in an action brought to recover money due to Mr. Mair for professional services.* The charge consisted of a commission of five per cent. upon the amount expended on the premises, and a certain sum for travelling expenses, time occupied in journeys, and money paid for the defendant. Architects who were called on the part of the plaintiff, deposed that the payment of five per cent. was invariably made to all architects in similar circumstances. They all stated, moreover, that without reference to such a custom, the services of the defendant were worth the money which he claimed over and above what he had received. Lord Denman denied the right to charge a commission, notwithstanding the positive evidence of the architects as to the existence of the custom to that effect. His lordship, however, told the jury that they were at liberty to give the sum in question to the plaintiff, or any other lesser sum that they might think proper, as money which he deserved to receive for the services he had rendered.

The jury returned a verdict for the whole sum claimed, with the special statement, as it seems (although we doubted it at the time), that they did not give that amount of damages upon the ground of commission, but because they considered it only an adequate reward for the services rendered. And fortunate it was for Mr. Mair, in the sequel, that this reservation was made.

On the 12th of last month, the Attorney-General applied to the court for a rule calling upon the plaintiff to shew cause why there should not be a new trial, upon the ground that as the "particular" claimed the money entirely in the character of a per centage, and as, according to the opinion of Lord Denman, the claim could not be allowed upon this ground, the jury not having power to go beyond the particular, ought to have found a verdict for the defendant. That they had not done so, the learned gentleman contended to be the result of his lordship having stated, that they were at liberty to fall back from the "particular" upon the declaration. This, according to the Attorney-General, amounted to a misdirection, and upon that ground the present motion was made.

Mr. Justice Patteson intimated, that although the jury found for the sum demanded as a per centage, yet, as it appeared that in returning the verdict they stated expressly that they did not give that sum upon that ground, it was possible that they only assumed the principle of the per centage as a convenient principle of calculation, or perhaps as a means of avoiding the necessity of making any particular calculation at all. Lord Denman desired that the affidavits should be handed up; and the Court took time to consider the application.

Last week the Court gave judgment, through Lord Denman, to the effect that although the jury rejected the claim as grounded upon the commission, they were justified in awarding the money as a compensation for labour. The rule for the new trial was therefore discharged.

We cannot allow this opportunity to pass, without again calling the attention of the architectural profession to the unsettled state in which the question of remuneration rests. It seems tolerably clear now, that a commission cannot be recovered by an action-at-law, and that architects must henceforth keep accurate accounts of the time occupied in the service of their different employers, in order that they may substantiate their claim on other grounds than that of commission.

The present custom, which is universally understood, is a convenient one both for the public and the profession, notwithstanding the objection there may be to it, and the opportunity it affords members of the bar to impute degrading motives to architects, which they seldom overlook. Even the Attorney-General, in the case in question, is reported to have said, that the evidence adduced at the trial established the important fact, that the plaintiff might, by abstaining from so large an outlay upon this building, have materially diminished his claim for commission!!

This of course, either meant nothing, or that architects were such a set of confounded rogues (devoid alike of honesty and gentlemanly feeling), that they would waste their employers' money by hundreds, in order to put trumpery fives into their own pockets. Fie, fie, Sir Frederick, you know better.

In consequence of our previous remarks, already alluded to, we received several communications relative to the ordinary charges of architects for different services, shewing (as we believed was the case) that some difference of opinion exists in this respect.

A report from the surveyor-general to the Secretary of the Treasury, dated 16th Sept., 1826, and a report of a select committee of the House of Commons in 1828 (quoted in Mr. Noble's "Professional Practice of Architects,") afford some useful information.

According to the latter, Sir Jeffrey Wyattville stated, "That he always received 5 per cent. on the outlay, and was also paid *for measuring the works*, wages for clerk of works, and for *his journeys*;" but he did not explain whether "*journeys*" meant travelling expenses only or included a sum for lost time. Sir Jeffrey's charging for measuring, in addition to his per centage, is, perhaps, a sufficient ground for forming an opinion, that such was not the case. Philip Wyatt, his brother, charged 5 per cent. on the expenditure, and wages for clerk of works and his travelling expenses, *if to any considerable distance*, but made no claim for *measuring or loss of time*. Mr. Nash and Sir Robert Smirke in the report before alluded to, confirmed the evidence of Sir Jeffrey as to *per centage only*, but neither made any remark in respect of measuring or journeys. Messrs. Cockerell, Hardwick, Soane, Wilkins, Seward, and Pilkington, all included measuring in their commission of 5 per cent.

At the late trial, all the architects who were examined, agreed in charging travelling expenses in addition to the 5 per cent.; but on the question of charging for the *time* occupied in travelling, there was a difference of opinion. Strictly speaking, however, there cannot be any doubt about it. If an architect is not overpaid by 5 per cent. for designing and superintending a building within a moderate distance from his habitation, it is quite certain that he will be much *under*paid, if every visit cost him a day, for example, instead of an hour. An architect's time is his stock in trade, and for that he must be paid.

For executing very large works, a less commission may reasonably be taken; and for works of trifling amount, say under 500*l.*, if drawings be made, a small additional charge ought to be allowed, as 5 per cent in such cases cannot remunerate the architect.

The same may be said in respect of additions and alterations, which occupy time, and require much thought, without so much apparent result as in new erections. In works by contract, should some ruinously low tender be accepted, often requiring increased watchfulness on the part of the architect, it is hardly fair that his commission should be taken on that amount: the honest value of the works done should be the guide. So when employers cut their own timber, make their own bricks, or buy their own slates, &c., the value of these should of course be added to the general amount of the works, and the commission be taken on the whole.

We shall return to the subject hereafter.

SUGGESTIONS FOR THE REVISION OF THE BUILDINGS ACT.

MR. EDITOR,—A reference to the pages of your journal and of the public press generally, will fully justify the conclusion at which all parties interested in building operations, in London and its neighbourhood, have now arrived, viz., that the Metropolitan Buildings Act has failed to effect those objects which the legislature had in view in framing it, and that an immediate and searching amendment of its provisions is imperatively required. It would be useless to recapitulate the causes of this failure, and of the general dissatisfaction which prevails with respect to many of its enactments, or to remark upon the mode in which they have been administered, without at the same time suggesting some remedy for the evils complained of; but it is absolutely necessary that the causes of failure, and of the prevailing dissatisfaction should be stated broadly and plainly, or no proper remedy can be applied; and as my professional experience of its operations has been considerable, not only in the capacity of a district surveyor, but through an extensive private practice, I venture to solicit a place in your columns for the following observations, which are made with a strong desire to improve the Act, and render it as far as possible what it was intended to be—a great public good.

The failure and dissatisfaction referred to, appear to me to have arisen as well from defects in the Act itself, as from the mode in which it has been administered.

In dealing with the first proposition, it will be impossible (if for no other cause than an undue occupation of your pages) to enumerate all the existing defects; there is, however, one pervading the whole measure, which appears to me a primary cause of the failure, viz., an unnecessary interference with private rights beyond what is really necessary to protect the public; protection to the public being in my mind a sufficient, but the only reason upon which such an act can be justified, and the only basis upon which its provisions should be founded—an act which compels me, because my property is within a certain limit, to deal with it by a multitude of restrictions, affecting its value in a totally different manner from that of my neighbour, who happening to be just without this limit, is left to dispose of and build on his property, in any manner that he considers most conducive to his interest.

The two great objects necessary in any Building Act for the protection of the public, appear to be, first, such sanatory regulations as will secure good ventilation, by wide streets, sufficient back areas, and effectual drainage; and secondly, the formation of such incombustible party constructions as will prevent the communication of fire from one building to another. Beyond the provisions necessary for effecting these objects, it is undesirable for the legislature to interfere, and such interference has, I contend, been one great and just cause of public dissatisfaction with the present Building Act, compelling the district surveyor

* See p. 605, vol. iii.

to exercise an inquisitorial power over the owner and builder, and raising questions between them of the most vexatious and irritating character. Under this category would fall all the provisions as to the distinctions drawn between the different classes of buildings; those referring to the fire-proof accesses and stairs to buildings of the first class; those referring to the introduction of timber, such as bond and plates in external walls (a fertile source of dispute and difference); those, again, referring to the placing timber and other woodwork within a certain distance of any walls having flues in them; many of the provisions in reference to chimnies, particularly those relating to pots and tubes, as well as to pipes for conveying heated air, the provisions regulating sign-boards, &c., &c.; and last, though not least, those which compel application to the official referees, often on the most trifling occasions. Many of these provisions may be good as between the owner and the builder, where the contract is voluntary, and the subject of treaty and arrangement between the parties, and where the modifications required by circumstances may at any time be made; but they are all more or less provisions in which the public have little interest, and they become most oppressive when forming the subject of a legislative enactment to be applied in all the variety of buildings executed in this great city and its suburbs, and from which there is no appeal, but at a considerable expense attended with much loss of time, delay to the builder being in many cases the more fatal evil of the two. In any amendment of the Act, the whole of these provisions require careful revision, some it would be desirable to strike out altogether, and to modify to a considerable extent those that are allowed to remain.

I have already mentioned, as an important feature in any building act, the proper provision for the erection of fire-proof party constructions; yet, strange to say, in this respect the Metropolitan Buildings Act is most defective; and the number and special nature of the notices render it even more difficult to condemn a defective party-wall now, than it was under the old act, while the expenses are increased in about an equal degree with the difficulty. The two united have induced many builders rather to erect external walls to their premises—permanently giving up valuable ground—than involve themselves in the delay and expense of proceeding to condemn the old and defective party-wall, with the risk, at last, of being defeated upon some slight irregularity or informality in the numerous notices he would be compelled to serve.

The provisions, therefore, connected with this subject require considerable alteration, if not entirely recasting, on the basis of the provisions of the 14th Geo. III., which were in every respect more simple and efficient. Well, indeed, would it be if this last-named Act was taken generally as the foundation of a new measure, retaining what has been found by experience to be effectual in its provisions, striking out and correcting such as are obsolete or defective, and adding other regulations required to carry out the sanatory regulations, which in that measure had been overlooked; for in spite of all that was urged against the old Act (and in much it certainly was defective) it still did more good, and answered more completely its main object—the prevention of the spread of fire, than any local Act that was ever passed: and unquestionably one of its best features was the effecting of this object, without interfering needlessly with the private rights of property.

It must be admitted, however, that the failure of the 7 & 8 Vict. is not solely owing to the defects I have pointed out in the measure itself, but is partly attributable to the mode in which its provisions have been administered.

It will be remembered, that under the old Act, when a difference arose between the district surveyor and any other interested party, the question was referred to, and decided by, the police magistrate, at the expense of a few shillings, and generally without delay; but if, from any difficulty in the matter, the magistrate required time for consideration, this delay was seldom extended beyond a few days. Many of these questions, however, were of a technical character, all more or less requiring a knowledge of the practice of building, which it was scarcely to be expected the police magistrate would possess. The provision, therefore, in the 7 & 8 Vict., by which matters in dispute were in future to be settled by reference to the official referees, who, it is declared, are to be architects of a certain standing, was expected to prove one of the best features of the measure. That it has failed to do so is quite notorious, for not only is the cost of a hearing much greater than it would have been under the old Act, but what is even of more importance in building operations, so much time is consumed before all the forms and proceedings can be gone through, and an award obtained, that the usefulness of the office is in a great measure defeated, and a growing disinclination to apply to the official referees is prevalent amongst the builders, who, in many instances, defer to the judgment of the district surveyor, although believing him to be wrong, rather than incur the risk of being involved in the payment of costs, and the certain loss of time which must elapse before his error can be corrected.

I believe the most effectual remedy for the evil here complained of, and it is a very serious one, would be to make the duties and practice of the official referees correspond, as nearly as possible, with those of the police magistrate, who, dispensing with the more regular proceedings and forms of the superior courts, proceeds to hear, and generally to decide the case without delay, and at a trifling cost. Once, however, admit into these courts the necessity for the litigating parties to sign cases, or for the magistrate to be compelled to make a formal award under his hand and seal, and the evils of expense and delay spring up in them to such an extent as would soon defeat the object for which they were founded, of cheap and speedy justice. And if it is contended that many of the questions decided in these courts are comparatively trifling in their character, the same observation will apply, and in a greater degree, to the questions on which the official referees have to adjudicate.

Again, it is most important in any amendment of the Act, that these officers should have the power of proceeding in the same independent manner that an architect, appointed as arbitrator, would do in any ordinary reference. That course of proceeding is to examine the parties, and elicit the facts of the case in the manner his experience may lead him to think most effectual,—unfettered by those legal forms and rules which obtain, and I presume are necessary in the courts of law, but which, nevertheless, sometimes stand signally in the way of obtaining justice, if only from the expense involved in their observance; and never more so than in questions connected with building operations. Having elicited the facts and formed his judgment on them, the architect (up to that time acting independently of his solicitor or counsel), if the case is of sufficient importance, then places it in their hands to draw the award. I submit this is precisely the course that should be pursued by the official referees, in all cases under the Metropolitan Buildings Act, and that it was the intention of the legislature they should do so. Thinking differently, I presume, they have followed a different course; it appears therefore indispensable that in any amendment of the Act, this mode of proceeding should be emphatically and clearly marked out for them to pursue. If such an alteration is made in their practice, I believe it will do more than any thing else to render their office both popular and useful, not only to the district surveyors, but to all who are interested in building operations within the limits of the Act.

It appears to me that a further improvement would be effected in the provisions connected with this part of the Act, by the appointment of three official referees instead of two, as at present; it will be unnecessary that they should all constantly sit, on the hearing of cases, nor would the funds provided for their payment (2,000*l.* a year) admit of such a course being pursued. I think, therefore, it will be a desirable arrangement that one should be appointed at a salary, say of 1,400*l.* a year; that he should be required to give up all practice both as an architect and surveyor, and devote the whole of his time to the duties of the office; that it should be his business to dispose of all cases in the first instance alone, unless at the special request from any of the litigating parties for a hearing by the three; that the duties of the two other official referees should be to act as a court of appeal, sitting, probably once a fortnight, or when required by the special application of parties, as before mentioned, on the first hearing; that these officers should be paid by a salary of 300*l.* a year each, and that their acceptance of the appointment should not oblige them to give up any portion of their private practice.

The prominent advantages of this course would be the devotion of the whole time and attention of the first-named referee to the duties of his office, uninterrupted by other interests and engagements, and what is extremely important, it would produce also a greater uniformity of practice in the cases decided under the Act, than can be expected where two architects are sitting either together or alternately, with minds differently constituted, and whose opposite decisions must in the course of time create much uncertainty and confusion. With these advantages in favour of this appointment, would be connected the formation of a court of appeal, which would protect the suitor alike against any wrong-doing or erroneous judgment on the first hearing. I believe the salary named (1,400*l.* a year), would always enable the Government to procure an architect of talent and character to fill the office of first referee, and his being compelled to give up private practice altogether would remove much disagreeable feeling that has prevailed, and many objections that have been urged against those provisions of the present Act, which give the official referees the power of examining and controlling the designs of their professional brethren, a duty that must have been amongst the most disagreeable to which those gentlemen now filling the office have been exposed, as it would be to any right-minded men hereafter appointed. I believe also, considering that the duties of the two other referees proposed to be appointed would be comparatively light, particularly when the practice under the Act becomes settled, that the salary proposed (300*l.* a year each), added to the distinction of a Government appointment, would induce architects of standing and character to seek for them, or if the salary was not thought sufficient, some fee might be added, to be paid by those parties who may on a first hearing desire to have the assistance of their judgment. I know that some of my professional brethren think it better that the court should always consist of three architects, but independently of other and grave objections, I know not how the expense of such a court is to be met, and considering how frequently the subject-matter of reference is of a very slight character, it would almost be a burlesque to require the judgment of three architects upon it. Cheap and speedy justice is what the public desire, and I am convinced, that any continued violation of the principles of the Act on the part of the first referee, even if the court of appeal should fail to correct him, would soon be set right by the public press.

I am afraid it will be urged, in addition to the causes before mentioned, that the unpopularity of the Act is partly owing to the administration of its provisions by the district surveyors; nor do I wish to shrink from the consideration of this part of the subject, but I believe, while admitting to a certain extent the truth of this assertion, that the best way of correcting the evil complained of, would be by making the appeal to the official referees both simple and economical; and although it might involve us in more frequent attendances before them, I can assert most truly, that so far from being interested in a continuance of the present expensive and tedious mode of application to those officers, I should rejoice to see the practice simplified to the greatest possible extent. I trust you will not suppose by this admission of our share in the general unpopularity connected with the Act, that I assent to the propriety or truth of all the charges made against the district surveyors. It must never be forgotten, that while the leading journal of the day has freely opened its pages to anonymous communications containing charges against them, it has steadily refused, with one exception, to allow the admission of any answer or explanation on their part, although authenticated by the name and address of the surveyor in each case. If these officers have exceeded the bounds of their duty in some instances, they have not escaped punishment, and while

on the one hand these errors have been fully set forth, their tale of difficulties and endurance remains untold; difficulties not caused alone by the ambiguous and doubtful readings of which the Act was capable, though these were plentiful, but in many instances by the hostile and perverse spirit of those with whom they were compelled to deal.

I will not, however, extend my observations on this debateable ground, but conclude by calling on you, Mr. Editor, to continue your efforts; and on the district surveyors and every person interested in property or buildings within the limits of the Act, to come forward, now that an opportunity is offered, and give their best assistance to Lord Lincoln and to the legislature, who will shortly have to reconsider its provisions in making them at once plain, simple, and effectual.

I am, Mr. Editor, yours, &c.,

A District Surveyor.

PROFESSOR COCKERELL'S LECTURES ON ARCHITECTURE.

The fourth lecture of this course was delivered on Thursday, the 29th ult., at the Royal Academy. Mr. Cockerell said, that he should enter upon the subject of geometrical beauty, shewing that it was permanent, not fluctuating, like form and colour; that it depended upon the great doctrine of co-mensuration, which was derived from nature, and how this principle was peculiarly conducive to beauty of plan. He should also point out certain defects in the application of the principle,—further, that the doctrine had been agreed to by all the great architects, as Alberti and others, and that the English school especially was founded on the principles of arrangement by the equal squares. He should then shew the derivation of terms from the Arabic, and speak of the doctrine of numbers as treated by Vitruvius, and others.—Nature was the foundation of all truths, and the architect noticed the geometrical arrangement in every description of natural beauty. It was also to be observed, that nature shewed an attachment to definite numbers and forms, as in flowers and crystals. He had exhibited the diagrams of Cæsarianus, which agreed with the general system:—the square and the circle were the elements, from which the figure and all the forms of architecture were derived. The forms of nature were governed by order and regularity. Pope had said,

> "All nature is but art, unknown to thee;
> All chance, direction which thou canst not see."

Indeed there was nothing in nature which could not give suggestions to the architect; in the vault over the honeycomb, he had the form best adapted for similar vaults in masonry, as had been clearly demonstrated. In the early days of railway engineering, we had commenced by laying the iron rails on blocks of stone, placed apart;—the engineer did not reflect upon the construction of the human frame, in which the cartilage was placed to support and protect the bones; had he done so, he would have then adopted a continuous bearing. Sir Christopher Wren, in the steeple of St. Bride's, had shewn the advantages, which might be derived from the works of nature. Reflecting, that the hollow spire, which he had seen, or built in so many varieties, was but an infirm structure, he sought some model, which should enable him to give it the utmost solidity and duration. Finding, that the delicate shell called turretella, though long and liable to fracture from the action of the water amongst the rocks, remained unbroken, in consequence of the central column, or newel round which the spiral turned, he adopted the idea. Therefore, in the centre of the spire, he placed the columella surrounded by a spiral staircase, and had thus constructed if not the most beautiful, at least the most remarkable and enduring of any spire yet erected. Also, when Brunelleschi designed the dome of Sta. Maria, at Florence, the diameter of which was nearly equal to that of the Pantheon, but which stood at more than twice the height from the pavement, upon a base raised on piers, it was evident, that in giving it the same solidity as its original model, the weight could not be supported on such a foundation. But Brunelleschi was an observer of nature; he reflected that the bones of animals, especially of birds, had solidity without weight, through the double crust and hollow within. But above all he remarked, that the dome which crowned the human form divine was constructed with a double plate, connected together at intervals, and that thus the utmost strength and lightness were combined. Therefore he followed this model in the dome of Sta. Maria, as shewn in a diagram, and the traveller now ascended to the summit between the two crusts or plates, forming the inner and outer domes. The same contrivance was adoped by Michael Angelo in the dome of St. Peter's, and in almost every dome, that had been constructed since that time. Thus it was evident, that the architect could derive most valuable suggestions from the works of nature. Their resources had been described in the Bridgewater Treatises, and no one could read these books without becoming the better architect.—The professor then proceeded to shew, how careful as to form and beauty nature had been, in whatever met the eye, and how careless in what lay concealed, how she had provided the "entasis" in the contour of the limbs, whilst the lungs and the bones were unsightly, every consideration but that of utility having been excluded. How attentive the Gothic architects had been to those teachings of Nature, he had previously shewn. That he who would really become an architect, must leave the special discussion of styles, and steadily look to the true end and aim of the art.

He next reviewed the points explained in his third lecture,* and made some further observations on the method of proportion adopted by the medieval architects. He exhibited a copy of the work of Cæsarianus, and shewed, that the author had himself led his readers into error, by his want of perspicuity, and his own errors in the diagrams. In the plan of Milan Cathedral, the Vesica Piscis was omitted; and further, Cæsarianus had drawn a number of diagonal lines between the columns, instead of the squares, which he had taken so much pains in describing. Alluding to the practical convenience of drawing the plan by equal squares, and the section by equilateral triangles, Mr. Cockerell said, that this convenience alone should not lead us to adopt those methods, the point to consider being, whether the eye derived satisfaction from the result. To be sensible of the advantages of a system, we ought to be well acquainted with many examples of its application.—He then spoke of the several systems of proportion, distinguished as the geometrical, arithmetical, and harmonic, all of them agreeing in the result; and proceeded to shew the influence of this doctrine of co-mensuration in the architecture of William of Wykeham. The plan of New College, Oxford, was similar to that of a cross church, the nave being omitted. The chancel or chapel was without aisles. The entrance was in the south end of the transept, or ante-chapel, the roof of which was supported by two columns. Now, nothing could exceed the delight, which the position of these columns, and the whole arrangement gave, on entering at the door; whereas in All Souls' Chapel, and in another, which he mentioned, both built in imitation of New College Chapel, the feeling was entirely different; it was an uncomfortable feeling, as if one could not breathe; it was like being in a straight waistcoat. If they examined the plan of the first-mentioned building, they would see, that the extent of its dimensions each way would be inclosed in the figure of the Vesica Piscis. Also, that longitudinally, it inclosed seven equal squares, two of these being in the ante-chapel. Transversely, the chapel contained two squares, and the ante-chapel four squares. The beautiful effect of the latter was caused mainly by the position of the columns precisely upon the intersection of the squares, an effect which we found to be deficient where, as in another example, the columns were slightly removed from that position. The internal proportions of the chancel, three diameters in length, were the best that could be adopted for a chapel; and in the total length we found the sacred number seven—the number of perfection. The beautiful arrangement first mentioned, was gained by including the walls in the width of two squares. In All Souls' Chapel, the two squares were exclusive of the walls; the internal length was two and a half diameters, and the effect, as before said, very inferior. In Winchester College Chapel, also by William of Wykeham, the squares were exclusive of, that is to say, fell inside the walls, and the effect was still beautiful. The reason was, that the whole length being seven squares, but that of the chancel six squares instead of five, a greater width was necessary to obtain the desired proportion. Nature had denied to the eye that perception of harmony, which she had given to the ear; but, when by culture the eye had been accustomed to correct proportions, the perfect arrangement would strike upon us at once, like a great mathematical truth. Proportion was the glory of the architect.

Though this theory of proportion was applicable to the plan, it did not apply to the elevation; here, inequalities were necessary. Daniel Barbaro, a translator of Vitruvius, and a delightful writer, from whom the professor made several quotations, had defined the two cases as "proportion" and "proportionality."

Mr. Cockerell then said, in reference to the supposed superstitious origin of the proportions of Gothic buildings, that it was of no importance in what language the system was revealed to us, so long as we were able to derive from it beautiful results.—Besides the system, which had been explained, there was another system, adopted in Germany and France, though but seldom in this country, and he had no doubt, that we should some day discover the explanation of it. Ratisbon, Munich, and Vienna, were examples of the arrangement on the Continent, and Lincoln, Bath, and Bristol, in England. He exhibited a plan of Ratisbon Cathedral, to which the system of equal squares did not apply. He then gave some explanation of an idea, which had occurred to him, by which he had supposed the plan might be regulated, and he had found, that in Bristol Cathedral, the result of the suggested system nearly corresponded with the building. The three equal heights of roof was an arrangement of great beauty, and might have been intended to symbolize the coequal nature of the three persons of the Trinity. Bishop King, who built Bath Abbey Church, was a great traveller, and had probably acquired the principle on the Continent. One thing, at least, we might feel assured of, that the old architects never worked at random; but it must not be supposed that they never varied from their rules; when the circumstances of the case seemed to demand it, they could not be subjected to such rigour.—In reference to the principle of the equal squares, Mr. Billings had lately shewn, that the same system applied to ornament. No person would have supposed, that the beautiful flamboyant tracery, specimens of which he exhibited,* were arranged upon squares,—and he could not but consider it as a confirmation of the theory. He then gave various methods of arranging the height from the plan, from Cæsarianus, and suggested that one or other of these systems might be found to apply to Beauvais, and other cathedrals in which the height was so enormous, that it could not be developed from the plan according to the system already described.—He then noticed the respect paid to particular numbers, as shewn in the pillars, and the frequent use of the number seven. Amongst other examples, he mentioned St. George's Chapel, at Windsor, and Exeter Cathedral, the last having seven columns in the nave, and seven in the choir. Alberti had said, that for this number the Almighty himself had manifested his peculiar delight, and there was constant use of it in the Bible. In other situations the number eleven was sometimes used to represent the apostles, Judas being omitted.

He next said, that the height of a spire was got by extending the squares on each side of the building, the height at present being 320 feet in the case of Milan Cathedral, where this mode was found to apply. The word "hecuba" was derived from the Arabic, and meant a spherical dome rising from a square; thus we must confess that we had derived this piece of skill, as well as that in turning arches from the Saracens; these circumstances supporting the opinion of Sir Christopher Wren, as to the Saracenic origin of Gothic architecture.—He said that in the mosques of Cairo, the system of equal squares was clearly discoverable, as might be seen from the plans in the work of M. Coste. The importance of Cordova as a seat of learning was great during the middle

* Reported in The Builder, page 50.

* From Billings's Geometric Tracery of Carlisle Cathedral, a specimen of which was given in The Builder, vol. iii. p. 186.

ages, and Cæsarianus referred in the same sentence to the learning of Cordova, and the writings of Aristotle. It was to be noticed, that Cæsarianus was an advocate for competition, for he had said, if a competition had been decided upon, "our hecuba" would have been sooner completed.—Mr. Cockerell concluded the lecture with some curious information on the use of the name architect, which was never general till the sixteenth century. Previous to that period that officer was merely "the master," though he had been clearly pointed to in certain passages in the Bible. Shakspeare said:—"Consult surveyors, know our own estate;" but in Titus Andronicus he said, "Chief architect, and plotter of these woes." The concealment of the names of most of the medieval architects was accounted for by the fact, that individual fame was never an object, every exertion was directed to the one end of erecting a noble fabric to the glory of the Almighty. * *

ROSLIN COLLEGIATE CHURCH.

Sir,—By your last number, I learn that Mr. Roberts brought before the members of the Architects' Institute some remarks on the paper I read there on the 12th of last month. As I was not present at that meeting, and my statement or judgment is impeached, I beg you will do me the justice to give insertion to the following brief remarks in self-justification. On quoting the following lines from Sir Walter Scott's "Lay of the Last Minstrel," I said there were almost as many errors, or mis-statements, as lines; at the same time passed a high eulogium on the commanding talents of that accomplished author. Before reading the stanzas I observed, "This building, as well as most of the old edifices of the country, has some marvellous story, or silly romance, or incredible legend connected with it. Such matters may serve as themes to embellish or diversify the stanzas of a poem, the pages of a novel, or the annals of a fabulous chronicle, but are unworthy of notice by the architectural antiquary, or philosophical historian. The following lines by that most imaginative novelist, Sir Walter Scott, are quoted not to afford any architectural or historical information, but to shew the general 'fictions and fallacies of poetry:'—

"—— Seemed all on fire, that *chapel* proud,
Where Roslin's chiefs *uncoffin'd* lie;
Each baron for a sable shroud,
Sheathed in his *iron* panoply.
Seem'd all on fire within, around,
Deep *sacristy* and altar's *pale*;
Shone *every pillar foliage* bound,
And *glimmered* all the dead men's *mail*:
Blazed *battlement*, and *pinnet* high,
Blazed every rose-carved buttress fair;
So still they blaze, when fate is nigh
The lordly line of high St. Clair."

Although there are not quite so many errors or mis-statements as lines, the number of words in italics shew that they are very nearly so. The building is not a *chapel;* it was erected and founded for a collegiate *church*, and had it been completed, would have been a large and splendid edifice. The best authorities that I have consulted do not say any thing of *uncoffin'd* chiefs in *iron* panoply; nor is it likely that such ever could be allowed. Putrified dead bodies would have excluded living ones from the church. There is no appearance of *sacristy*. Instead of *every pillar foliage bound*, there is only one thus adorned; and this has given origin to a puerile story, which the old female cicerone of the building may repeat and believe, though none but an old woman will give two moments' credence to. I believe there are not any *battlements* to the building, and I do not know that the word *pinnet* is either architectural or archæological.

Let it not be imagined by the reader that I make these remarks with any ungenerous or unkind feelings towards the author of the inimitable "Waverley Novels," whom I had the pleasure and honour of knowing and corresponding with in life, and whose memory and merits I revere, in death. His works have been read and admired by millions of people, and have afforded me, with other readers, indescribable gratification and delight. The youthful reader should, however, be warned against errors, mis-statements, and misrepresentations even of popular authors.

In the paper I read at the Architects' Institute, it appears from Mr. Roberts's remarks, that I was not sufficiently explanatory about the *extraordinary construction* of the eastern wall, and the alterations effected by rebuilding it after it had been once raised. I certainly did not make any comments or criticisms on Mr. Roberts's ingenious and original theory; but intimated that I agreed with him in believing the wall does not occupy the site as at first planned and intended by the architect. It occurred to me on a cursory consideration of the subject, that the whole plan had been marked out on the ground, from the "*draughts drawn on eastland boards*," which were "*carved by the carpenters*" as described in Father Hay's MSS., and that when the masons had carried up the walls and pillars of the whole building to a certain height, and had also *prepared* much of the superstructure, particularly those remarkable stone beams, or lintels which extend over the aisles, and their connecting vaultings, the architect discovered that the space at the east end, between the easternmost pillars and the wall, was not wide enough for the religious services at the four altars, placed under so many windows in that wall. This I believe is Mr. Roberts's opinion, and I do not feel inclined to doubt, much less to dispute it. But as the subject is very curious, and perhaps unparalleled in architectural construction, I would recommend a careful examination of the eastern wall in conjunction with those on the north and south sides, and particularly the positions and formation of the angular buttresses. Further, let the ground be excavated and explored, to ascertain if there be any remains of foundation between the present eastern wall and the three pillars.

For good illustrations of the fragment of the singular Collegiate church at Roslin, I refer the inquisitive antiquary to the third volume of "*The Architectural Antiquities of Great Britain*," in which there is a ground-plan and several other engravings of views, elevations, sections, and details; to "*The Provincial Antiquities of Scotland*," in which there are two beautiful prints from drawings by Mr. Blore, with a short account of the building by that architect. Mr. Edward Cresy, architect, has given two very interesting sectional engravings of the same edifice, in his fragment of a work on Bridges, &c.

I am, Sir, yours, &c., John Britton.

FALL OF A VIADUCT ON THE ROUEN AND HAVRE RAILWAY.

In our impression of the 24th ultimo we noticed this accident, and promised to revert to it. The cause of the catastrophe is still enveloped in mystery. The contractors, Messrs. Mackenzie and Brassey "are disposed to attribute it to the substitution (with Mr. Locke's approbation) of stone-work in the bases of the piers for the brick-work prepared in the original plan." This alteration was made at their request with a view to accelerate the progress of the works. It appears that the whole work was of brick excepting the bases of the piers, which were of stone, the arches were semicircular, and of ample strength; on the day before the accident not the slightest flaw had been discovered in any part of the brick-work, but vertical cracks near the corners had been observed in the stone-work. This stone-work was ashlar facing, hearted with rubble. Uniting these facts with the additional ones of some haste being made in the erection, and a great deal of rain having fallen, both during the progress of the works and since, a very reasonable inference may be drawn as to the origin of the disaster. The *Railway Chronicle*, of last week, has the following remarks on the subject:—

"We must here notice a sort of professional controversy which exists in France between the English engineers and the French. We English like brick-work—we unde stand it, and we make it good; so good, that from one end to the other of the railway not a single flaw could be detected by the inspector-general in any part of the brick-work of the line. The French engineers do not like brick-work. They are, perhaps, better acquainted with stone, and certainly like it better. Be this as it may, the consequence, as regards this work, has been as follows:—This bridge was originally designed by the engineer and contracted for as *all in brick*. The contractors, partly to expedite the work and partly to please the French engineers, asked leave to make the bases of the piers up to a certain point in stone-work; they obtained the permission of the engineers to do so; and thus, in a desire to expedite the work and to please the French engineers, they have brought on themselves a loss in which we must all sympathize with them, and which we can attribute to nothing but the best intentions. This casualty, while it entails pecuniary loss, will raise the character of the contractors for honesty and responsibility, both here and abroad.

Well, to return to the accident. This stone base was of 10 feet greater diameter than the brick pier resting on it. The chief pressure of the weight of pier and bridge was thus brought to bear on the rubble hearting. The tendency of this to crush the hearting and burst the facing is manifest. The vertical cracks visible that morning in the stone casing were evident symptoms of it; and as the upper work was perfectly sound, and had been some time completed, and as the pile foundations are still perfectly sound as far as can be discerned, the cause is manifest.

The lessons it teaches are also obvious: we are all wise *after* the fact—we can all *now* see that it was weak to yield to an idle prejudice and not use brick throughout as intended—we can all see that it would have been better to wait until the bricks were got than to build work to tumble down! But who would have ventured to say beforehand, to this point you may go, both in haste and in materials, and no further? No! Contractors and engineers must often make sacrifices of mere opinion to accomplish what they conceive their duty to the companies they serve: and if, in doing so, they commit errors, they are but men gaining experience, and they have to pay for it. But in this country, at least, when they bravely set their faces to do their work honestly and well—and when taken as a *whole*, the work is honestly and creditably done, as every thing is that English engineers and English contractors have done in French railroads—they will meet with that sympathy and support from their countrymen which they have a right to expect, and they will be entitled to that respect and esteem abroad which their achievements must command from all right-minded and judicious men."

Cause of Accident on the South Eastern Railway.—We referred to this accident on the 24th ult. (see page 44). Since then a coroner's inquest has taken place, and Mr. Barlow, the resident engineer, gave evidence as to the cause. He attributed the accident to the rush of water from the north (or river) side of the railway, through the occupation-bridge into a ballast-pit on the south side. He was of opinion, however, that the disaster would not have happened had the ballast-pit been full of water at the time. He considered the bridge to have been strong enough to withstand the force of any flood, had it not been for the fall of water which followed on the ballast-pit being nearly empty. This had had the effect of first carrying away a portion of the embankment, and then undermining the foundation of the abutments on which the bridge rested.

The Aust Bridge.—The Admiralty have consented to the intentions of the Bristol and Liverpool Junction Railway Company to erect a suspension bridge across the river Severn. The design submitted is by Mr. Thomas Fulljames. It will reach from a point south of Austhead to an opposite point south of Heachley. There will be three principal openings of 1,100 feet each, three main piers, 60 feet each, and six openings in connection with these piers of 100 feet each. The entire water way will be 4,740 feet. The first principal span will be from Austcliff to the Ulverston Rock, thence to the Lower Bench Rock will be the second principal span, and from this latter position to the Dod Rock will be the third principal span. The *Monmouthshire Merlin*, for the 17th ultimo, gives an engraving of plan and elevation of the proposed structure.

New Houses of Parliament.—The reappointment of the former committee of the House of Lords to inquire into the progress of the building of the new Houses of Parliament has been agreed to on the motion of the Marquis of Clanricarde.

NOTES IN THE PROVINCES.

Some very extensive alterations and restorations in Cranfield Church, Bedfordshire, are in contemplation. The plans that have been agreed upon comprise works that will occasion an outlay of 2,000*l.*——The late high tides have destroyed upwards of half a mile of the upper esplanade at Weston-super-Mare, also the wall erected near the library. These works were repaired in the early part of last summer, at a heavy expense. At Kingston-Seymour, a few miles from the above locality, the sea wall for the length of half a mile was washed down.——A meeting took place a few days since at York of the donors and subscribers to the York Yeoman School. Lord Morpeth occupied the chair. It appears that a sum, 3,400*l.*, is required for the purchase of a site and the erection of a building capable of containing fifty boarders. The sum in hand already amounts to 2,600*l.*——It is expected that the Hull Glass Company will commence manufacturing in six months' time, and they have announced that they will proceed first with German sheet or patent plate glass. ——Considerable improvements at the Ferry-boat Dock, at Hull, are in contemplation. The plans of Mr. J. B. Hartley are spoken highly of; the cost of carrying them into effect is estimated at 8,000*l.* The improvements consist in the projection of an open piled jetty, two hundred feet in length, from the very centre of Nelson-street. This will have two arms at the extremity, running east and west, extending nearly from the east pier to within a few yards of the short jetty opposite to the Vittoria Hotel. Commodious landing-places will be formed both on the southern and northern sides of this transverse jetty, where passengers can land at any state of the tide, and, without further impediment, walk ashore. ——The inhabitants of Aberdeen are taking active steps towards the establishment of public baths. An extensive and convenient site has been selected, and the committee of management apparently enter upon their task with energy and judgment.

RAILWAY JOTTINGS.

The following are the members proposed by Sir R. Peel to be appointed the Select Committee on Railways:—Lord G Somerset, Sir G. Grey. Mr. Strutt, Mr. Labouchere, Mr. Estcourt, Mr. Greene, Mr. Ewart, Mr. Colquhoun, Mr. Hodgson Hinde, Mr. Pakington, Sir G. Clerk, Mr. F. Baring, the O'Connor Don, Lord H. Vane, and Mr. Shaw.——The engineer of the Ipswich and Bury St. Edmund's line reports that "The earthwork removed to embankment up to this time is 350,000 cubic yards; single fencing set up, 30,000 lineal yards; and permanent road laid, 10,000 lineal yards. The requisite culverts, and bridges in masonry and timber are in hand, and many of them completed." The total force employed at the present time on this line is 947 workmen and 155 horses.——It is the intention of the South-Western Company to make a branch to Hampton Court. When it is considered that the number of annual visitors to the palace exceed 150,000, surprise must be felt that such an undertaking remains to be carried out.—— The three-arched bridge across the Ayr, about half a mile below Hawford-bridge, on the Glasgow, Kilmarnock, and Ayr line has been commenced. The principal arch of the viaduct when completed will be 190 feet high—higher, it is said, than any similar structure in the kingdom.——A memorial has been addressed by the Liverpool merchants to the directors of the London and Birmingham and Grand Junction lines requesting them to run an express line daily between Liverpool and London, at six A.M., each way, so that an inhabitant of either place may visit the other and return the same day.——It is intended shortly to convey passengers from Edmonton to the adjoining station, in omnibuses without additional fares. Should the plan succeed, it will doubtless be adopted throughout the whole of the Eastern Counties line as well as on other lines, and also in the metropolis.—— The Central Railway station at Leeds will be confined within the limits of the Coloured Cloth Hall and the Infirmary, with their grounds extending into King-street and York-place with the gardens in front of the latter. The estimate for the purchases and erection is 250,000*l.* —— Messrs. Craven and Sons, the contractors for the Lincoln, Newark, and Nottingham line, are making rapid progress and speak with confidence of their being able to complete their contract by the 1st of July.—— The Atmospheric Railway of St. Germain will be opened in May next. The double bridge over the Seine and the great viaduct of 20 arches raised to the height of 60 feet are entirely finished. The company was compelled to obtain the necessary tubes from England.

IMPORTANCE OF CONSTRUCTIVE SCIENCE.

DEFECTIVE ROOF.

Sir,—In a late number of your valuable journal, allusion is justly made to the decline in the constructive arts, apparent amongst our operatives, and the consequent inconvenience experienced by architects in procuring men able to execute their designs. This is a fact much to be lamented, and calls for the adoption of some means whereby our artizans may be instructed in the principles of construction, and have that stimulus given to their energies by which alone the object sought is ever to be attained.

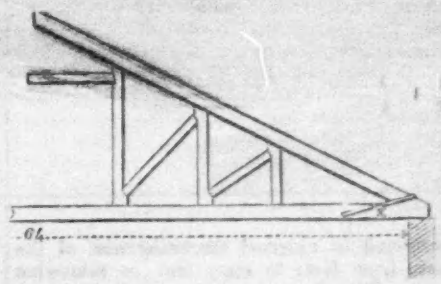
Whilst decline amongst our operatives is an evil to be regretted, and, as has been observed, demands a cure, there is another, and if possible, an evil of still greater moment, which cannot altogether have escaped your notice. I refer now, to the ignorance of constructive science which unhappily appears in the works of too many of the architects of the present day. If it be important that the workmen should understand the principles of construction, how much more essential is this knowledge to the architect, whose business it is to design and direct?

How many instances might be referred to where costly edifices have been erected, otherwise expressive of skill in design, but which, from defective construction in some important part, may essentially be said to be supplied with the means of their own destruction!

One instance, amongst the many, I cannot forbear to notice, evidencing the correctness of the preceding remarks. Passing lately through a town not 100 miles from Hull, my attention was arrested by the sounds of workmen engaged in a recently erected chapel.

Externally, the edifice presents a somewhat imposing appearance, having a Corinthian colonnade in front, surmounted by a pediment. Passing within, I observed an extensive scaffold erected, and an attempt making to repair a roof of defective construction.

It is almost incredible that a roof 64 feet span, with queen posts and straining beam, should have been constructed without discharging braces,—and yet here we have an example. The annexed sketch of this roof shews in its details, I must say, almost a total ignorance of the principles of construction. The trusses are placed 16 feet apart.



The construction of this roof, as will be seen, brings a great weight upon the tie beam, and, consequently, a considerable degree of deflexion therein, amounting to 14 inches. This deflexion has necessarily broken the ceiling to pieces.

The deficiency of the roof clearly manifested itself on the laying on of the covering, and the means resorted to as a remedy were equally inadequate with the roof itself. Wrought-iron straps were applied, as shewn on the sketch, to the feet of the rafters (X), and these were connected by bolts to other straps, which extended to some length on the beam, and towards the lower edge. By this means it was intended to raise the tie-beam, and to keep it in its proper position.

It is to be regretted, that the repairs now going on, though entrusted to other hands, seem likely to reflect no greater credit on the skill of the architect employed than belongs to his predecessor. The proposed remedy consists of the application of timber beams, placed transversely beneath the tie-beams, supported by iron columns 12 inches diameter, rising from the floor of the gallery.

At as small a cost the roof might have been taken down and reconstructed, or I have no doubt that the required additions to it might have been made without recourse to this; and how much preferable would the result have been to the perpetual inconvenience and deformity now introduced!

Should these remarks be deemed worthy a place in your journal, and be the means of calling the attention of any of your readers to the necessity of a sounder and more practical education being given to architects, the object of the writer will be attained.

I am, Sir, yours, &c., An Architect.
Bradford, Yorkshire.

GAS.

Sir,—I am glad to see by various letters, that an attempt at improvement in the manufacture of an illuminating gas, is at last beginning to attract public attention. That there is room for improvement is, I believe, generally acknowledged. I have, however, in vain looked for some information relative to the *direct* manufacture of a *pure* illuminating gas. "J. A. E.'s" letter, in a former number, slightly points out the advantages of oil-gas. "J. A. E." may rest assured, that a proposition to manufacture gas from any other material than coal, would meet with the strongest opposition from existing coke and gas companies. There is, I believe, scarcely a consumer of gas but who complains of the high price, inefficiency of light, and impurity of the present gas. He complains, but no remedy is applied; and he cannot do without gas, for the use of it has become a necessity. Gas companies have certainly expended large capitals, and are obliged to keep up an expensive establishment; but why should the public pay for it, if a better gas from other materials than coal can be manufactured at a cheaper rate? Why manufacture an impure material, and afterwards, at an enormous expense, purify it? It is like a chemist mixing poison in his medicines, and then, by an expensive process, which the public must pay for, extracting it to render them consumable.

The gas companies state, that they cannot reduce their prices without loss: it therefore becomes necessary to adopt some means for manufacturing a cheaper gas.

There is one subject connected with gas which I think ought to be brought prominently before the public, viz. that every parish should establish their own gas works, and, instead of annually paying large sums into the pockets of gas companies, expend it either in the improvement of the parish, the extension of charity, or reduction of poor-rates.

Paddington, Jan. 8th. Observer.

In London, where the consumption of gas is very great, and the coke is sold at a good price, the charge for gas is 7*s.* per 1,000 cubic feet; and the engineers profess they cannot sell it with a profit at less.

In Plymouth, where the consumption of gas is small, the price of the same quantity of gas is only 4*s.* 6*d.*; and I find upon inquiry, that this has been caused by the formation of a new company, under the direction and management of Mr. Hachison, engineer of the London Gas Company.

May I ask how it is that this gentleman can consistently recommend the sale of gas, where the consumption is small, at 4*s.* 6*d.* per 1,000 cubic feet, and charge 7*s.* 6*d.* per 1,000 cubic feet where the consumption is so much larger?

T. A. H.

Extensive Sale of Bricks.—At a sale of bricks by Mr. Mumford, at Wanstead Park, Essex, on the 22nd ult., the property of the Earl of Mornington, one lot of 105,000 sold at 33*s.* per thousand; 240,000 at 31*s.*; 170,000 at 23*s.*; 150,000 at 31*s.* Smaller lots of 10,000 each, from 17*s.* to 31*s.* The purchasers to clear at their own expense.

ANCIENT ARCHITECTURE OF IRELAND.

Fig. 1.

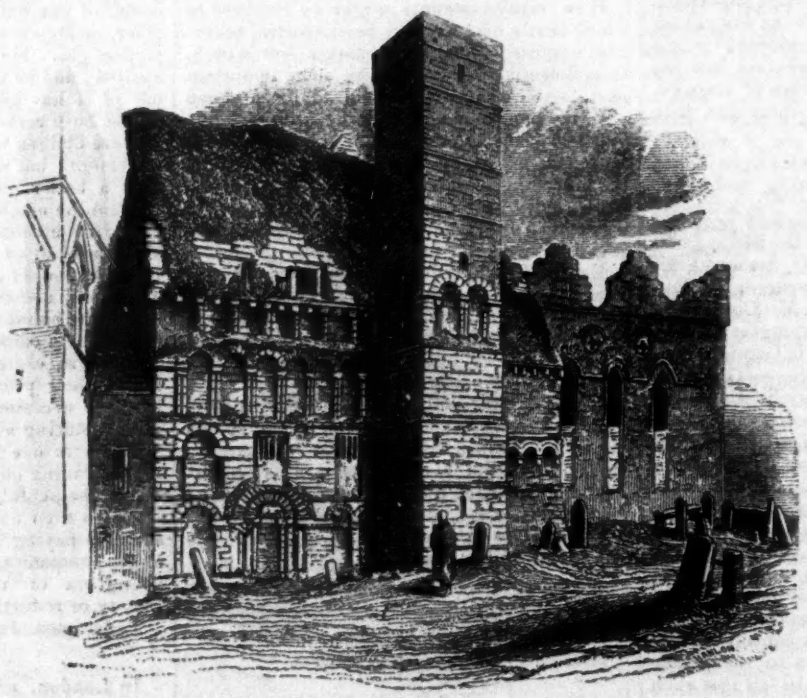


Fig. 2.

THE ECCLESIASTICAL ARCHITECTURE OF IRELAND.

MR. PETRIE'S BOOK.

In a notice of Mr. Petrie's elaborate work on the origin and uses of the round towers of Ireland, already given,* we briefly extracted the writer's conclusions on this much debated question, and promised to refer again, more particularly to that part of the book which treates of ancient architecture in Ireland, generally. Before proceeding to redeem this promise, we lay before the reader a view of the perfect tower on Devenish Island, in Lough Erne, as an example (fig. 4.), with part of Mr. Petrie's general description of the towers:—

"They are rotund, cylindrical structures, usually tapering upwards, and varying in height from fifty to perhaps one hundred and fifty feet; and in external circumference, at the base, from forty to sixty feet, or somewhat more. They have usually a circular, projecting base, consisting of one, two, or three steps, or plinths, and are finished at the top with a conical roof of stone, which frequently, as their is every reason to believe, terminated with a cross formed of a single stone. The wall, towards the base, is never less than three feet in thickness, but is usually more, and occasionally five feet, being always in accordance with the general proportions of the building. In the interior they are divided into stories, varying in number from four to eight, as the height of the tower permitted, and usually about twelve feet in height. These stories are marked either by projecting belts of stone, set-offs or ledges, or holes in the wall to receive joists, on which rested the floors, which were almost always of wood. In the uppermost of these stories the wall is perforated by two, four, five, six, or eight apertures, but most usually four, which sometimes face the cardinal points, and sometimes not. The lowest story, or rather its place, is sometimes composed of solid masonry, and when not so, it has never any aperture to light it. In the second story, the wall is usually perforated by the entrance doorway, which is generally from eight to thirty feet from the ground, and only large enough to admit a single person at a time. The intermediate stori s are each lighted by a single aperture, placed variously, and usually of very small size, though in several instances, that directly over the doorway is of a size little less than that of the doorway, and would appear to be intended as a second entrance.

In their masonic construction they present a considerable variety: but the generality of them are built in that kind of careful masonry called spawled rubble, in which small stones, shaped by the hammer, in default of suitable stones at hand, are placed in every interstice of the larger stones, so that very little mortar

* See page 576, vol. iii. This work forms vol. xx. of the Transactions of the Royal Irish Academy, and is published by Messrs. Hodges and Smith, of Dublin, to whom we owe thanks.

appears to be intermixed in the body of the wall; and thus the outside of spawled masonry, especially, presents an almost uninterrupted surface of stone, supplementary splinters being carefully inserted in the joints of the undried wall."

Mr. Petrie believes that stone buildings were erected in Ireland earlier than is usually admitted, and gives views of some of the round barrow-like houses, built by the earlier saints. Oratories were the first stone buildings erected there for Christian uses. He gives evidence, that the churches at Armagh were built of stone and lime cement as soon as the middle of the ninth century. The openings of these early structures are covered sometimes by one large stone as a lintel, and at others by the triangular arch, if it may be so called, formed by two stones inclined towards each other at the top, which is found in the early works of so many people.

Fig. 5 (on p. 68) represents the east window of the oratory at Gallerus, built without cement.

What Rickman called "long and short" work, is very generally found in the ancient churches of Ireland. Some of the buildings are Cyclopean in style; mostly simple and unadorned. As early as the ninth century, however, the writer maintains that they exhibited ornaments and mouldings similar in some cases to those we call Anglo-Norman.

Coming on a little later, he describes some architectural remains at Glendalough, represented by fig. 3. They are part of the chancel of the church of the monastery. The chancel was originally stone-roofed, and measured internally 15 feet 6 inches by 11 feet 5 inches.

"At its east end it has a stone bench or seat, one foot eight inches in breadth, and extending the length of the wall, like that in the little chapel called the Priest's House, and at a distance of two feet from that seat stood an isolated stone altar, — since destroyed,—five feet in length, two feet eleven inches in breadth, and about four feet in height. In its south wall are three niches, one foot six inches in depth, one of which appears to have been a fenestella for a piscina, and the two others were probably ambrys, or lockers. Of these niches the first is one foot six inches in breadth, the second two feet eight inches, and the third two feet four inches. At the upper end of the north wall there is a similar niche, but of smaller size, being only one foot four inches in breadth, and one foot two inches in depth. This chancel was lighted by a single window, placed in its east end; but this was destroyed previously to the year 1770.

The nave connected with this chancel, and which appears to have been without ornament, was about forty-two feet in length, and about twenty-six feet in breadth, and seems to have been entered by a doorway placed at the eastern extremity of the south wall, near the chancel arch. On its north side there appears to have been a range of apartments for the use of the officiating clergy of the place, but their divisional walls cannot now be traced."

"This archway is a compound one, consisting of three receding piers with semi-columns, the arrangement of which will be sufficiently understood from the prefixed illustration, recently drawn. Its breadth, at its innermost arch, is ten feet, and its height to the vertex was eleven feet: the height of the semi-columns is six feet one inch and a half, of which the capitals measure nine inches and a half, the shafts four feet, the bases eight inches, and the plinths eight inches."

We regret that we have not space to follow Mr. Petrie through his interesting inquiry; the utmost we can do is to point out its scope. We cannot refrain, however, from giving views of the well-known stone-roofed church on the rock of Cashel, called Cormac's Chapel, figs. 1 and 2.

"The erection of this church is popularly but erroneously ascribed to the celebrated king-bishop Cormac Mac Cullenan, who was killed in the battle of Bealach Mughna, in the year 908; and it is remarkable that this tradition has been received as true by several antiquaries, whose acquaintance with Anglo-Norman architecture should have led them to a different conclusion. Dr. Ledwich, indeed, who sees nothing Danish in the architecture of this church, supposes it to have been erected in the tenth or beginning of the eleventh century, by some of Cormac's successors in Cashel; but he adds, that it was 'prior to the introduction of the Norman and Gothic styles, for in every respect it is purely Saxon.' Dr. Milner, from whose reputation as a writer on architectural antiquities, we might expect a sounder opinion, declares that 'the present cathedral bears intrinsic marks of the age assigned to its erection, namely, the twelfth; as does Cormac's church, now called Cormac's hall, of the tenth.'—*Milner's Letters*, p. 131. And lastly, Mr. Brewer, somewhat more cautiously indeed, expresses a similar opinion of the age of this building: 'This edifice is said to have been erected in the tenth century; and from its architectural character few will be inclined to call in question its pretentions to so high a date of antiquity.'—*Beauties of Ireland*, vol. I., Introduction, p. cxiii.

A reference, however, to the authentic Irish Annals would have shewn those gentlemen that such opinions were wholly erroneous, and that this church did not owe its erection to the celebrated Cormac Mac Cullenan, who flourished in the tenth century, but to a later Cormac, in the twelfth, namely, Cormac Mac Carthy, who was also king of Munster, and of the same tribe with the former."

"In the ornamental details of the building a peculiarity will be found to distinguish

ANCIENT ARCHITECTURE OF IRELAND.

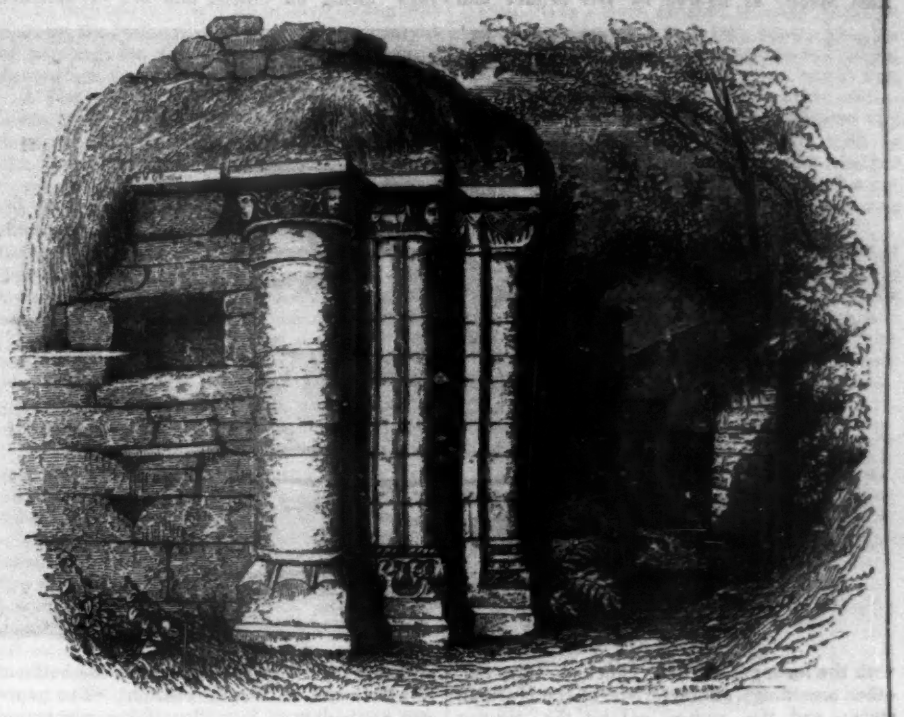


Fig. 3.

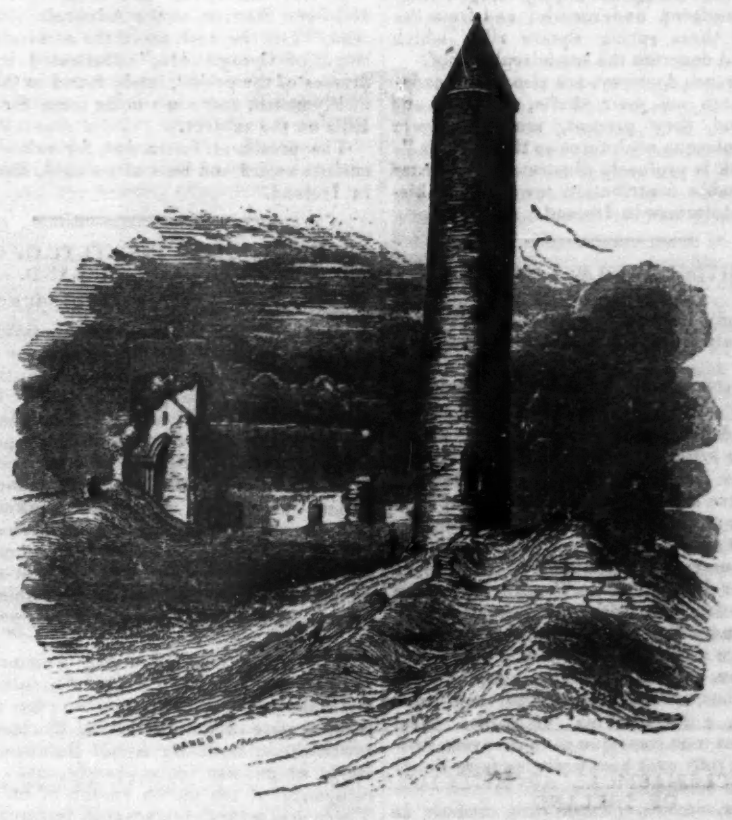


Fig. 4.

them from those in churches of earlier date. Externally the walls are decorated with blank arcades of semicircular arches, arranged in two stories,—resembling very much the churches sculptured on the marble fonts in Winchester Cathedral, and in the neighbouring one of East Meon, as figured by Dr. Milner and others,—and the lower of these arcades is carried round the southern tower. Internally the side walls are decorated with similar arcades, except that, in the nave, the arches do not spring from columns, but from square pilasters. These pilasters have impost mouldings resting on billets, and are ornamented

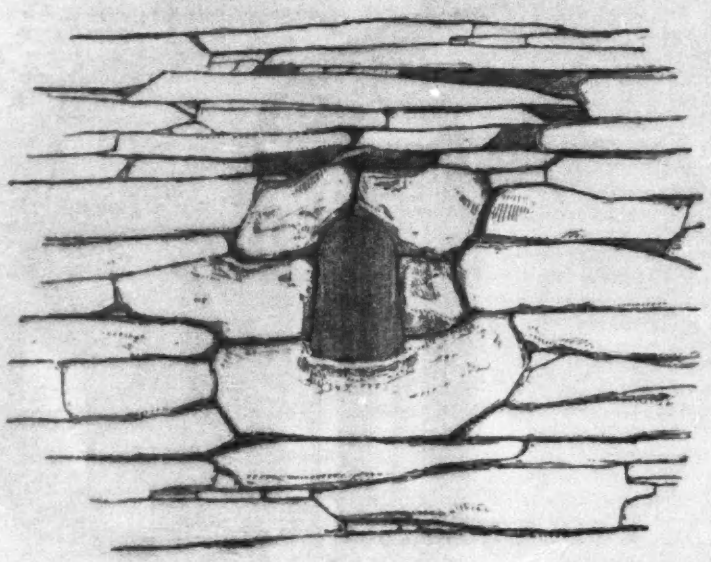


Fig. 5.

with the lozenge, hatched, checked, star, and other mouldings, characteristic of the Norman style; and the arches exhibit the zig-zag moulding both on their faces and soffits. Above these arcades the north and south walls of the nave are ornamented with a series of stunted semicolumns, resting on a projecting string-course chamfered underneath; and from the capitals of these spring square ribs, which support and decorate the semicircular roof.

The entrance doorways are also richly ornamented, both on their shafts, capitals, and arches, and they present, moreover, very curious grotesque sculptures on their lintels."

The book is profusely illustrated, and forms a very valuable contribution towards the history of architecture in Ireland.

BRITISH ARCHÆOLOGICAL ASSOCIATION.

This body held its periodical meeting on the 28th ult. Several new associates were elected.

The secretary read the following admirable letter from Mons. Victor Hugo on his election as an associate:—

"Je suis heureux, monsieur, d'applaudir au mouvement archéologique de l'Angleterre. L'Angleterre est une grande nation, qui a eu une grande architecture. L'architecture, c'est l'histoire d'un peuple qui s'écrit dans ses monuments. Conserver les monuments, c'est sauver la grandeur du passé. La France commence á comprendre cette vérité; l'Europe entière la comprendra un jour. Fasse Dieu seulement que ce ne soit pas trop tard!

"Tout ce qui se fait en Angleterre dans ce grand but, national pour vous, historique pour nous, a d'avance ma ympathie. C'est donc de tout mon cœur que je vous envoie l'adhésion que vous avez bien voulu me faire l'honneur de me demander.

"Agréez, monsieur, l'assurance cordiale de mes sentimens les plus distingués.

"Victor Hugo."

The Rev. Beale Post communicated some discoveries in the neighbourhood of East Farley, Kent, consisting of some Romano-British urns (similar to those discovered at Caistor) containing burnt human bones; fibulæ, &c. Mr. M. A. Lower furnished a report of further discoveries at Lewes Priory, also a *fac-simile* of the inscription on the tomb of Gundreda, in Southover church. Mr. Lower stated, that in digging to the east of the foundations of the church, the railway excavators cut through an immense pit more than 18 feet in depth, completely full of human bones, the stench from which was so great that the workmen were obliged to desist; upwards of twenty tons of bones were removed from this charnel-house; he supposes they had probably been interred there after the battle of Lewes in the thirteenth century. The paper was accompanied by a plan of the conventual buildings hitherto discovered, and drawings of the various remains which have come to light.

A very interesting and amusing paper by Mr. John Barrow, of the Admiralty, was then read, "On the uniform of the admirals in the reign of George II.;" illustrated by some dresses of the period, lately found in the stores at Plymouth, and some notes from Sir Henry Ellis on the subject.

The president forwarded, for exhibition, a curious sword and boss of a shield, discovered in Ireland.

ARCHÆOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.

NORMAN GATE-TOWER—AND CHURCHES.

At the 2nd meeting of the committee for the exhibition of antiquities, and for archæological discussion, held on Friday, the 30th ult., a letter was read from Mr. Edward Richardson, the sculptor, giving an account of further excavations on the site of the priory at Lewes, to which we have referred elsewhere, It stated that as all the Caen stone foundations are taken up by the workmen for the sake of the material, a most perfect outline of the ground plan is left for the moment, and he suggested that some artist should be employed to make a plan of the whole building, before the further railway operations efface these traces.

A letter was read from Mr. Tymms, local secretary, at Bury St. Edmunds, calling the attention of the committee to the present ruinous state of the interesting Norman gate-tower there, built by Abbot Baldwin, A.D. 1095, which was subsequently used as the campanile of the parish church of St. James. There are several remarkable features about the architecture of this tower. On the west side is a stone porch with a penthouse roof projecting from it about five feet, within is a rich archway springing from sculptured capitals, the tower is surmounted by battlements, believed to be part of the original design, and among the earliest known specimens of embrasure work in England. The whole of the masonry of this tower is in a very crippled state, particularly on the east side, in several instances the disruption has been so complete, that a person in the interior can see through the core of the building into the churchyard.

A report having been made by Mr. Cottingham, stating the dangerous state of this tower, a committee of nobleman and gentlemen was appointed to raise the funds necessary for its proper repair and for the purchase of the two houses which disfigure and conceal part of the porch, and for the convenience of which the tower has been cut away and endangered. By this means a sum has been collected not however adequate to meet the necessary expenses, Mr. Tymms therefore expressed the hope that by the liberal exertion of those generally interested in archæology, the further subscription requisite might be collected, so that the repair, which daily becomes more urgently necessary, might be commenced.

Mr. J. W. Burgon exhibited a Roman brick, discovered in making the foundations of the Post-office, St. Martin's-le-Grand, inscribed with the letters L O N. The word L O N occurs on the coins of Constantine the Great and other late emperors, and has been considered by numismatists to indicate *Londinium* as the place of mintage. This brick is, therefore, probably, in like manner, stamped with the place of manufacture—London. Several bricks of this kind are known to have been discovered.

Mr. Proctor communicated a drawing of an inscribed cross at Bishop Barton, in the high road from York to Beverley, which is supposed to have been one of four crosses marking the limits of the sanctuary at Beverley.

Mr. Alexander Nesbit communicated a report on four churches in Norfolk, which he conceived to contain portions of Saxon architecture, Roughton, Bassingham, Gresham, and Thwaite. The two first of these churches have each a round tower at the west end. In the upper part of the tower are four windows facing the cardinal points, divided by a single pier and terminating in a triangular head, formed of two lintel stones placed at an angle to each other. At Roughton the central pier as well as the jambs are built of courses of stones rudely shaped with a hammer. At Bassingham the central pier on each side is formed of a single stone; a capital is slightly indicated in the pier of the west window. Each window at Bassingham has a projecting course of small stones roughly squared surrounding it. The lower part of this tower is formed of large stones scarcely dressed. Both these structures are built of the coarse red sandstone of the neighbourhood, which is not used in the Norman or later styles when flint and oolite were substituted. Norman remains, Mr. Nesbit stated, are very rare in this neighbourhood. Only one of these churches is mentioned in Domesday-book, but we cannot infer from this that they were not then erected.

A letter was read from the Rev. H. Longueville Jones, local sec., relative to the excavations now actively in progress on the site of Segontium, stating that great stimulus had been given to the subscription in aid of this object, by the recent donation of 5*l.* from the committee of the Institute. The letter also called attention to the state of the ancient walls of Caernarvon, and Mr. Jones expressed the hope that these interesting specimens of military architecture might not be suffered to fall into decay, but that the example of Government might be followed who had repaired Caernarvon Castle with the most praiseworthy care (?)

A number of antiquities were exhibited by various members, but we have not space to particularize them.

INSTITUTE OF THE FINE ARTS.

DECORATIVE ART.

On Saturday evening last, this society held a meeting in the great room at the Society of Arts, Mr. T. L. Donaldson in the chair.

Mr. Buss read an interesting paper on the union of historical and decorative art. He alluded to the new and extraordinary stimulus given to the pursuit of high art during the last three years, under the auspices of the Royal Commission of Fine Arts, and expressed a conviction that the artists had answered the call made upon their talents in a manner more gratifying than could have been anticipated by those who were aware of the little encouragement previously held out for the cultivation of the highest department of art. The possession of a great school of historical painting by any country was not the work of a moment, and those who dwelt so much upon the superiority of the French and German schools ought to recollect the immense sums of money constantly expended during a long series of years, and the rewards of rank and honour so liberally distributed by royalty, to the eminent

professors of art in both of those countries, and contrast this with the sort of patronage afforded by Great Britain to her artists, before they entered on the comparison. Even at the present day the demand for historical art is limited to the moderate views of the royal commission, and an occasional picture for an altar-piece, while the walls, the ceilings, and the corridors of palaces, mansions, halls, public buildings, and churches, remain still unadorned with works of historical art. It is true that decorative painting is in some few instances made use of, but then the question which formed the subject of Mr. Buss's paper arises, may not the blandishments of colour and effect be united with art having a higher aim than would appear to have been thought of in Britain for the last two centuries? The paintings of the Campo Santo at Pisa, and of the Capella Sistina, and the Loggie of the Vatican at Rome, are familiar in name to every ear, and in several modern instances in Germany and France historical and decorative art have also been united. It is most desirable that some attempts of the same kind should be made in England. The ceiling of the Louvre has been painted by French artists of the very highest grade; and the walls, ceilings, and other available spaces of public buildings generally in Paris are adorned in a similar manner, while in England this style of decoration would appear to be unknown. But there is also another important application of historical painting, namely, the external decoration of edifices. For this purpose mosaic, sgrafito, or scratched work, fresco, and oil painting, are all applicable. After exhibiting some views of the decorated front of a house in the market-place of Verona, and describing the great works of art to be seen on the exterior of St. Mark's, at Venice, and in other Italian cities, Mr. Buss proceeded to argue on the absurdity of English artists considering it derogatory to the dignity of their art to engage in what might be termed "sign painting." But three instances of external ornament have come under his notice. One was the office of the *Pictorial Times*; another was a house in Oxford-street, decorated in the Moorish style, after a design by Mr. Owen Jones; and the third was a house in Great Marlborough-street, painted externally with arabesques in fresco, by no less an artist than Francis Rigaud, the Royal Academician. Mr. Wyse mentions in flattering terms the external painting on some houses in Frankfort, and at Munich some similar decorations have been exposed to the effects of the weather for a considerable period without sustaining any injury. Another mode of encouraging historical painting, which is unfortunately generally lost sight of, is to bring art to bear on the general arrangements, both internal and external, of buildings—to unite, in fact, the skill of the painter with that of the architect in the original design.

Mr. Franklin said, in a few well chosen words, that there could be but one opinion as to the applicability of art to all purposes. He regretted that the artists of England should think it derogatory to them to engage in designing for manufactures. According to his view there was nothing too high for art to reach, or too low for art to adorn. The wider the basis of art was made, the higher could the structure be carried.

The chairman said he regarded the paper which they had heard read that evening as highly interesting, not only to English artists, but to the whole sphere of society in general, for the more the fine arts were promoted the greater would be the sources of enjoyment within the reach of all classes of the public. He thought that all the high attempts of art should have some special purpose in view. Such was the case with all the great works of Michael Angelo, Domenichino, and Leonardo da Vinci on the walls and ceilings of the churches and palaces of Italy; and such it was also that constituted the great value of the sculptures of the Parthenon and the other magnificent temples of ancient Greece. He would wish to see English artists influenced more by the love of art than they appeared to be. He concurred fully with what Mr. Buss had stated as to the propriety of the architect and painter being consulted simultaneously about the design of a building, and he could assure that gentleman that members of his (the architect's) profession were most anxious for the painters' aid in their labours. It was, he believed, now the practice at Munich to build some of the large churches devoid of mouldings and all architectural ornaments, and to leave them entirely in the hands of the painter for their decoration. How far such a practice was commendable he would not say, but he mentioned it as a proof that throughout Europe, the feeling in favour of the employment of painting for the purpose of architectural decoration, was on the increase.

A statement of the losses sustained by the institution in the number of its members by death since the last session having been read, Mr. Foggo expressed his gratification at this new feature in their proceedings. He hoped the plan would be followed out, and that in the transactions of the institute which would before long be published, some notice of all deceased artists, whether members of their body or not, would be recorded in a manner calculated to raise the character of artists and the society. He then alluded very eloquently and, better still, very feelingly, to the death of Mr. Henry Shenton, son of the well known engraver, who, although too young to have earned a great reputation, lived long enough to have encountered disappointments. The group which he exhibited at the first exhibition in Westminster Hall possessed a character which but few sculptors could put forth.

The chairman paid a similar tribute to the memory of poor Müller, the landscape painter; and afterwards took occasion to remark on the low state of criticism on the arts in this country. It was most important that artists of eminence should condescend to criticise works of art in all their details. There could be no more wholesome school for young artists than would be afforded by such criticisms, and it was highly desirable that the heads of the profession should endeavour to advance art, not only by their pencil but by their pen.

Mr. Cull read an interesting communication from Mr. H. J. Stanley, dated from Munich, and giving a general review of the present state of art in Germany, with a criticism of the respective styles of all the more distinguished of the German artists; after which a well deserved vote of thanks to the chairman was passed (Mr. Donaldson was more than usually happy), and the meeting adjourned.

THE TIMBER TRADE.

The annual circulars of Churchill and Sim, Warrington, and other firms, afford much useful information on the subject, and suggest various inquiries. It appears, in the first place, that prices have varied considerably throughout the season, and that, while Canadian deals have been upon the advance, Baltic have receded in as great a ratio; "timber," properly so designated, from all quarters, except St. John's, having risen to a high point towards the close of the importation. The stocks on hand of foreign deals and battens are large. There were of deals, in 1845, 852,936 pieces, whereas in 1846, there are 1,024,577 pieces, and of battens there were in 1845, 368,246 pieces, against 499,464 pieces in 1846.

It seems a great question whether the Swedish timber which has taken the place of Quebec red pine is so good as that which it has displaced. Much of it is said to have been used for railway sleepers,—we think unwisely. A large quantity of yellow pine remains on hand.

REDUCTION OF THE DUTIES.

On Tuesday night, Sir Robert Peel announced the promised modification of the duties on foreign timber. He said, "We propose to make ultimately a reduction in the differential duty on foreign timber, so that the duty shall remain after the reduction at 15s. instead of the present amount. I think on hewn timber the duty is now 25s.; we propose to reduce it to 15s. But with the view of insuring to the consumer as great a benefit as possible, the Baltic timber trade partaking now very much of the nature of a monopoly, in consequence of the very great demand for it (the supply being hardly sufficient to meet the demand), we do not propose that the reduction shall be immediate. We propose that from the 5th of April, 1847, the period of the year we think most suitable for making a reduction of duty—we propose that from the 5th of April, 1847, the duty on hewn timber shall be reduced by 5s.; and on the 5th of April, 1848, by another 5s. With respect to sawn timber maintaining the same proportions, the reduction of duty ought to be 6s. on the 5th of April, 1847, and another 6s. on the 5th of April, 1848. With respect to other descriptions of timber, such as masts, spars, &c., he proposed to make a proportionate reduction, but whether or not that reduction might not, with benefit to the consumer, be made immediately—viz., from April 5, 1847, without any more gradual reduction, he did not wish to risk an opinion, not being quite certain whether to ensure the benefit to the consumer, the reduction should be made to extend over two years or not."

The formal resolution stands, "that from and after the 5th of April, 1847, the duties of customs now payable upon the foreign goods undermentioned shall cease and determine, and that in lieu thereof there shall be charged the following duties on such foreign goods on their importation into the United Kingdom, viz.—

	From and after April 5, 1847.	From and after April 5, 1848.
Upon timber and wood goods, not otherwise charged—viz., timber or wood, not being deals, battens, boards, staves, handspikes, oars, lathwood, or other timber or wood sawn, split, or otherwise dressed, except hewn, and not being timber or wood otherwise charged with duty—the load of 50 cubic feet ..	£. s. d. 1 0 0	£. s. d. 0 15 0
Deals, battens, boards, or other timber, or wood sawn or split, and not otherwise charged with duty—the load of 50 cubic feet	1 6 0	1 0 0
Wood—Planed, or otherwise dressed or prepared for use, and not particularly enumerated or otherwise charged with duty, &c. &c.	0 0 6*	0 0 4*

We are disposed to think the proposition a good one, as it will give opportunity for proper arrangements on the part of both buyers and sellers.

The *Times* says:—"Of the necessity for this reduction it is by this time almost superfluous to speak. The experience of the last three years, which has taught so many lessons, and added so much to the traditions of legislative wisdom, has spoken on this point with remarkable emphasis. The colonial trade has almost doubled under half its former protection, shewing the inverse ratio in which this much vaunted blessing benefits commerce. The price of all kinds of timber is now so high, that we should imagine no writer would be so hardy or so ignorant as to consider it the special duty of the nation to keep up the colonial prices. However it may fare with other interests, there is a greater interest than all at stake—the interest of those many undertakings on which the domestic industry and capital of this country are employed, and on the cheap and successful execution of which our prosperity partly depends. Expanding towns, streets rebuilding, new suburbs for the artisan, new cottages for our labourers, public edifices, railroads, tunnels, bridges, viaducts, stations, shipyards, warehouses, pits, and mines, are all on the increase, and bid fair to increase still more; they all demand every fiscal assistance compatible with the necessities of the state. The infinite branches of one vast speculation stretch over the land, and bind all its inhabitants in one vast community of interests. The least paralysis or check will be felt not by one, but by all. While it is the stern duty of legislative prudence to restrain an ardour or a cupidity which compromises itself and entangles itself beyond its real powers, it is not less the duty of legislative kindness to afford every possible facility for useful, legitimate, and *moderate* enterprise."

RAILWAY COMMITTEES.—Mr. Charles Buller, and some other members, advocated in the House of Commons a few nights since the appointment of a standing commission or board to relieve the Commons' committees of the judicial part of the railway business.

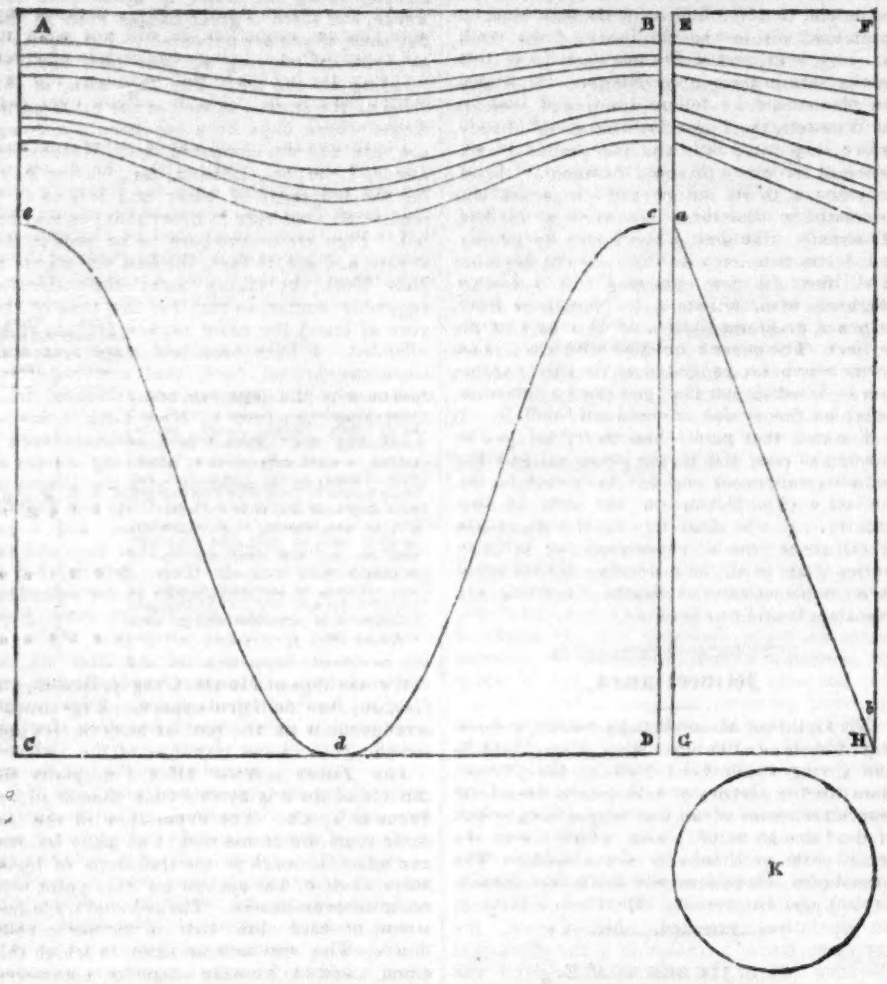
NEW GAS WORKS are being constructed at Scarborough on an improved plan by Mr. G. Malam, who is both the contractor and inventor.

* Per foot of cubic contents, and further for every 100*l.* value, 10*l.*

DEVELOPMENT OF THE PLANE SECTIONS OF CYLINDERS.

In the accompanying diagram, ABCD is the development on a plane of the surface of the cylinder EFGH, whose end or circular section is K.

If a cylinder is thus cut square at the ends, the sections will be circles, and if the cylinder is rolled on a plane, the circumferences of the circles of the ends will roll along right lines parallel to each other. But if a cylinder is cut obliquely by a plane, say *a b*, the circumference of the plane section will be an ellipse, and while the cylinder is rolled on a plane the circumference of the ellipse will roll along a waved line *c d e*. The greater the obliquity of the plane section, the more the wave line will deviate from the right lines described or rolled by the square ends or circular sections.



Here is then a power of obtaining from a cylinder any gradation of this character of wave at will. The waves of development of the elliptic edges of oblique plane sections of cylinders, are all in four parts respectively symmetrical—that is, one quarter of any such wave contains all the variation of curvature in that wave. The curvature changing from some finite radius to infinite radius, in some finite distance.

In the accompanying example is shewn, how a cylinder may be cut by a series of oblique planes, so that the development of them would give a series of waves which had the ancient Greeks known, they might have applied to the Ionic Capital. This would be proceeding on principle—principle which will admit of the strictest investigation, and in execution of the utmost degree of perfection or accuracy.

It may be here observed that there is a beautiful simplicity in the way that tangents to this class of waves, at the points of contrary flexure, may be determined with very great accuracy, so as to make portions of them applicable to many purposes, when a fair continuous line is required from a right line to a curve, and from a curve to a right line.

To determine the centre of curvature for the quickest parts of any wave of this class, say at the points *c*, *d*, and *e*, is submitted as a question (and many others might be submitted) to your mathematical readers.

JOSEPH JOPLING.

29, Wimpole-street, 31st Dec. 1845.

RAILWAY DEPOSITS.—It is said Glyn and Co.'s bank, the largest railway bank in England, has paid into the Bank of England deposits to the amount of 1,500,000*l.*; Jones, Lloyd, and Co., 950,000*l.*; and Masterman and Co., 600,000*l.*

SOCIETY OF ARTS.

THIS society met on Wednesday evening, 28th inst., W. F. Cooke, Esq., in the chair. The first paper read was by Mr. Claudet, on some principles and practical facts in the art of photography, and contained a series of scientific researches, and communicated several important discoveries in this curious field of research. This paper was a sequel to a communication read by Mr. Nott on a previous evening, in which he had endeavoured to establish that the rays which make the photographic picture are different from those which produce light, and this he thought he had proved by means of pictures formed with a polarized ray reflected from parallel plates. Mr. Claudet contended that the rays of light are the agent. He had made many experiments on forming pictures by reflection, but had not been able to discover any essential difference betwixt them and such as are formed by the direct ray.

His next series of experiments regarded the photographic qualities of light of different colours, blue proved to be the most powerful photographic agent, yellow the weakest. One of the most beautiful experiments by which this was proved consisted in throwing the prismatic spectrum on paper, and on the silver plate, the colours being marked on the paper and the effect remaining on the photographic plate. He thus shewed that the photographic prism presents effects very different from the apparent intensity of the prismatic spectra. A remarkable specimen was shewn of a silver plate on which the rays of light had brought out a powerful picture, without the action of mercury.

Another series of experiments made, was on the photographic action of the rays of the moon, which had formed a powerful picture by five minutes' exposure. He hopes to be able to obtain a very accurate daguereotype of the moon's surface, *drawn by* herself on a silver plate.

Mr. Rettie's paper on a new code of signals and the construction of the signal lamps was next read, and illustrated by models and experiments. By the simple use of a pair of slides attached to an ordinary lantern, a combination of signals is effected, by which the loss of life and property by the collision of steam-boats and sailing-vessels, might be cheaply avoided.

PAVING BOARDS v. THE BUILDINGS ACT.

MR. EDITOR,—You will oblige by informing me through the columns of THE BUILDER, whether the several district surveyors are putting the new Buildings Act into operation as to shop-fronts and their projections, or whether the powers exercised by the paving boards of the different parishes supersede the authority of the district surveyors and the new Act? The insertion of this in THE BUILDER, with your answers to the two questions abovenamed, will oblige a constant reader.

J. H. S.

*** The referees awarded, in the case of a stone eagle set up by the Messrs. Baily of Royal Exchange Buildings (see THE BUILDER, p. 577, Vol. III.), "That although by virtue of the provisions of the Metropolitan Buildings Act, cited in the said requisition, certain projections may project beyond the general line of fronts in any street or alley, subject to the restrictions therein set forth, yet such provisions are to be deemed to be permissive to such extent only, as any other law may not prohibit the subject matter thereof; and that the provision in Section 5 of the said Metropolitan Buildings Act, which requires that the provisions of that Act be observed, notwithstanding any thing contained to the contrary in any other Act of Parliament then in force, is to be deemed to apply to such provisions of the Metropolitan Buildings Act as are obligatory, and not to such as are permissive only."

THE COMPETITION CARTOONS.

MR. FRANK HOWARD has addressed a letter to us (on our refusal to insert his previous communication), which is the most extraordinary specimen of bullying lying insolence we ever had the fortune to receive. We beg leave to inform this person we are not to be driven from our course by his threats, and have no intention of giving increased circulation to the unwarrantable insinuation commented on by our correspondent, "An Old Writer," by reprinting it. The *Athenæum* is accessible to all, is read by all, and all may therefore see whether or not Mr. Howard's meaning was perverted by "An Old Writer."

As to the falsehoods that he *threatens* (forsooth) to make public in the event of our refusal to insert his letter, although personally indifferent to them, we offer him a timely word of caution. He has already exposed himself to the derision of his contemporaries: let him take care that he does not entail upon himself their contempt. We are not anxious to assist his desire to thrust himself into public notice, but if we are *forced* to speak again on the matter, it shall be loudly and to the purpose.

PROPOSED IMPROVEMENT IN PICCADILLY.—We have already referred to the very great improvements which have been progressing for some time past in Piccadilly; the street has been considerably widened by throwing into it a portion of the adjoining park, and a neat iron railing has been erected, through which some cheerful scenery may be viewed even by pedestrians. These improvements being now nearly finished, a correspondent is desirous of drawing attention through the medium of our columns to the pleasing effect produced by allowing the row of trees to remain along the distance from Park-lane to Down-street, and suggests the desirableness of continuing the row some distance further east, even to Cambridge House. We cordially join in the suggestion, and cannot imagine any valid objection to its adoption.

DUTY ON BRICKS.

Mr. Editor,—I am sure you will be doing the public a great service, and that portion more immediately connected with building in particular, if you urge the necessity of a repeal of the excise upon bricks. This tax is paid upon an article produced by ourselves, and which everybody directly or indirectly consumes; therefore should the loss of this duty be felt by the minister, I am sure none could or would complain of an increase of direct taxation, which sooner or later must ensue. All bricks good, bad, and indifferent, pay the same duty. All experimentalists who attempt new modes of making bricks, should their bricks on first experiments turn out bad, suffer not only the loss of such failure in the ordinary way, but have to pay a tax to the Government for making the attempt. This has been severely felt by some landowners, who have attempted such improvements. I know a person who really commenced this on a large scale with the best possible motives, viz., that of employing the surplus poor on his estate, and from a love of art, but who was obliged to give it up, from the continued drain upon his purse for the excise upon bricks, which in the course of his experiments turned out failures.

Moreover, the law at present has a tendency to confine us to the use of a brick of a particular form and dimension, and to keep the brickmaker behind the spirit of the age. Let this law be repealed, and you would soon have bricks of a better "body" and of every size and form both for ordinary plain buildings, and for every kind of decoration a brick can be applied to, also of a better colour.

All the architects who are raising an outcry against the use of cements, should seize this opportunity of getting the word *brick* into the new measure proposed by Sir Robert Peel, and not cease agitating until they have obtained a repeal of this odious war tax, for it was first levied for the necessities of the war in the year 1784, and since that period bricks have greatly diminished in quality, and the skill of the workmen who lay them has certainly not kept pace with that shewn by all other classes engaged in building.—I am, Sir, yours, &c. Δ

WHAT IS IN THE TIBER?

We mentioned some time ago, that two or three Englishmen had offered to cleanse this celebrated stream, by dredging, and to take whatever they might find in it, in lieu of other recompense. The "Art-Union," in an article on the subject, says:—

"In reflecting upon the history of this great "Mistress of the World,"—embroiled with foreign foes, and torn by internal commotion—we feel certain that this river, running in the midst of a population of millions of men, must of necessity, both by accident and design, have been made the receptable of a host of valuable and curious things.

The Tiber had once four bridges passing over it: near one of them, the ancient Pons Janiculensis, Ancus Martius built a splendid citadel: *three* of these are destroyed, and their remains most likely lie undisturbed. The Ponte Rotto is still a highly curious ruin; near to it are the remains of the magnificent house of the great and unfortunate Rienzi, which appears to have been built in the eleventh century, and made up of fragments of an earlier date: its beautifully sculptured exterior excites general admiration. Close by, is the splendid ruin of the Temple of Vesta; the Church of St. Maria, built on the ruins of the Temple of Ceres and Proserpine. At the foot of the Ponte Rotto is the Grotto of Cacus, the remains of the Sublician Bridge, the Prata Murcia, the situation of the Camp of Porsenna, the mouth of the great Cloaca, the island of Esculapius—which, as is well known, once contained two splendid temples.

We mention these remains as affording an idea of the architectural treasures with which the banks of the Tiber were once enriched.

A variety of circumstances favour the notion that vast treasures in taste lie hidden in the alluvial depths of the Tiber; for, in times of commotion, whatever was engulphed therein was not likely to be removed while the ferment remained; and, from the indolent and unenterprising spirit of the Italians, it is probable no effort was ever made to recover what was lost."

INSTITUTION OF CIVIL ENGINEERS.

February 3rd.—Sir John Rennie, president, in the chair. The paper of the evening was by Mr. W. H. Barlow, "On the existence (practically) of the line of equal horizontal thrust in arches, and the mode of determining it by geometrical construction." The author commenced with a review of former theories on the subject by David Gregory, La Hire, Attwood, Coulomb, and Moseley. With the latter he agreed in the principle, that the line of resistance must be contained within the thickness of the arch, at every joint, and must meet each joint within the limiting angle of friction. The analogy between the catenary, the line of pressure of Whewell, the line of resistance of Mosely, was then pointed out, and the practical existence of the curve of equal horizontal thrust, together with its nature and properties was successfully illustrated by various models. The mode of obtaining the curve by geometrical construction was then shewn, together with formulæ for obtaining the necessary thickness of abutments, &c. Numerous drawings and diagrams illustrated this part of the subject. The paper concluded with a reference to the various circumstances in which arches were placed in practice, and the modifications to which theory was consequently subject. It was stated that more than thirty bridges on the Manchester and Birmingham railway had been erected, according to the principles described, with perfect success, and with considerable saving in brickwork. In the discussion which ensued the speakers accorded in attributing great credit to the author for his accurate mathematical investigation, and the judicious application to practice.

Miscellanea.

Meeting of Masons.—Last week, a meeting of the operative stone-masons was held in the Concert-hall, Lord Nelson-street, Liverpool, for the purpose of taking into consideration whether an advance of wages, or a reduction of the hours of labour, would be of the most permanent benefit to the trade. The attendance was numerous, there being upwards of 600 persons present. Mr. George Dobson, an operative, presided. Mr. Carter, the secretary, moved a resolution to the effect, that the condition of the masons of England was such as required considerable improvement, both morally, mentally, and physically, and they were also of opinion that a reduction of the hours of labour in the summer months to nine hours per day, was better calculated to effect such improvements than an advance of wages, and they pledged themselves to use their utmost exertions to carry the arrangement into effect. A second resolution stated, that in order to carry out the spirit of the foregoing resolution effectually, it was necessary that a good understanding should exist between every member of the trade, and to effect this it was essential that all who were not members of the masons' society should enter it as early as possible, and that a committee be appointed by that society to convey their intentions to the employers of Liverpool and vicinity.

St. Simon's Church, Liverpool.—Relative to this proposed church, we learn from the *Liverpool Mail*, that within the last few days the building committee, out of ten plans sent in to them by the principal architects of the town, have unanimously selected the one designed by Mr. John Hay, of St. George's Chambers. Having ourselves examined Mr. Hay's plans, continues the *Mail*, we take leave to compliment the committee upon the correct taste they have shewn in selecting them. If the intended building in any degree comes up to its paper drawing, it will be both an ornament and credit to the town, and, we may add, to the Church also: there will be a character, *a tone* about its external appearance—the graceful spire, the high-pitched roof, the splendid windows, that will arrest attention, and tell out to what and *Whose* service it has been dedicated. The porch of the principal, or western entrance, will be divided from the body of the church by a handsome screen, inscribed with appropriate texts, and fitted with plate-glass panels. The entire ground floor of this church will be fitted with open benches.

New York; the Paving, Scavenging, &c.—In scavenging and cleaning the streets, as well as roughing, paving, &c., New York is far behind Manchester and the generality of our large English towns. The pavements in the middle of the streets are composed of irregular boulder stones, with gaps or holes every now and then, enough to break a horse's leg if unused to them. The grids being often stopped by the floatings of vegetable matter, ashes, &c., which are thrown into the streets, cause the water to accumulate and freeze, and there is great danger even in the day time, if you are not careful—but especially at night—of tripping up your own heels by treading on the ice. The flags also, at the sides of the streets, as well as the brick pavements where flags have not been put down, are very uneven, compared with Manchester, Leeds, Liverpool, London, &c., leaving holes for the lodgment of water and ice, so as to require all your care in order that you may not fall. Pigs are everywhere to be seen in the streets, and are, in fact, the best scavengers in New York, by taking away the offensive vegetable matter, so that (at this time of the year at least) the nasal organs are not at all offended. I have been told more than once since my arrival here, that one important reason why the pigs are not prevented from traversing the streets of New York is this:—That any man who would advocate such a course, would offend the labouring classes so much, by thus interfering with the liberty of their pigs, as to forfeit their votes and support in the attainment of municipal and other offices. I have little doubt that time and experience will remedy these defects, but at present they form drawbacks to the splendour of New York.—*Memoir of B. Braidley, Esq.*

Another Accident at Paris.—A terrible accident happened on the 31st ult., in the workshops of Messrs. Chagot, Brunet, and Co., 30, Rue de Bienfaisance. Experiments were made with an iron framework destined for the roof of the terminus of the Orleans-Tours railway, made after the plans and models of the engineers and architects of Government. One experiment of burthening the surface of the framework had perfectly succeeded. It was then intended to calculate the strength of one single king-post by attaching to it wooden scales, charged with weights, when, at once, the whole framework came down. The workmen could not retire quickly enough, and twelve were dangerously wounded. Mr. Brunet himself was mortally wounded, and shortly afterwards died. What Mr. B. wanted to experimentalize upon were three pairs of *principals*, of cast-iron. Hitherto, in France and England, wrought-iron has been used, whose greater elasticity is averred, as it has to stand both flexion and traction. It will be matter of risk now to put the whole iron framework on the top of the terminus—being an elevation of six metres, with thirty-six cast-iron pillars to support it. Then, besides the weight which is to be borne by it, the constant vibration occasioned by the passing of the trains is to be taken into account. Now, concludes a worthy Paris contemporary, the falling of such a roof over a whole train of passengers would be the most awful catastrophe ever recorded in railway history.

Improvements in the Electric Telegraph.—For some time past the attention of Messrs. Wheatstone and Cook in this country, and of M. Matteucci on the continent, has been directed towards ascertaining whether one conducting wire for telegraphic communication be not sufficient, instead of two, heretofore used. A great variety of experiments have been made and some novel phenomena connected with the electric fluid elicited. The result is a most perfect confirmation of the theory entertained *à priori*. A telegraph consisting of a single wire is now in operation on the Edinburgh and Glasgow Railway, and, according to *The Scotsman*, "works beautifully." A distinct message can be conveyed and an intimation that it has been received returned in one minute, and a simple intimation notifying the presence of the operator can pass and repass in two seconds.

Restoration.—The old church of Binbrook, St. Mary, Lincolnshire, which has been in ruins 20 years, will be shortly rebuilt.

The Lakes.—By Midsummer next, visitors to the Lakes of Cumberland will be able to reach the same by railway.

INTERMENT OF THE DEAD IN CHURCHYARDS.—Mr. Anderton, one of the Common Council members for Farringdon Without, has given notice of the following motion, which will be discussed in the next court:—"That this court do petition Parliament to pass an Act, to prohibit interment of the dead in churches and churchyards within the city of London and other large cities and towns, and prevent the violation of graves. The hon. member has also given notice that a petition be presented to both houses of Parliament to pass an Act to prevent nuisances arising from the smoke of steam-engines and furnaces in manufactories and buildings situate in and near the cities of London and Westminster, and from steam-boats on the river Thames.

MEETINGS OF SCIENTIFIC BODIES.

During the ensuing week.

MONDAY, Feb. 9.—British Architects, 16, Grosvenor-street, 8 P.M.; Geographical, 3, Waterloo-place 8½ P.M.

TUESDAY, 10. — Civil Engineers, 25, Great George-street, 8 P.M.; Freemasons of the Church, Newport-street, 8 P.M.

WEDNESDAY 11. — Graphic, Thatched House Tavern, 8 P.M.

THURSDAY, 12. — Royal, Somerset House, 8½ P.M.; Antiquaries, Somerset House, 8 P.M.; R. S. Literature, 4, St. Martin's-place, 4 P.M.

FRIDAY, 13. — Royal Institution, Albemarle-street, 8½ P.M.; Philological (London Library), 12, St. James-square, 8 P.M.

Tender.

For building a public-house in Lewisham-lane, for Messrs. H. and V. Nicholl: Mr. R. P. Browne, architect.

Travers	£886 0
Penny	938 0
Piper	996 0
Pilboe	999 0
Haynes & Co.	1,032 0
Trego	1,035 0
Hill	1,037 0
Wade	1,055 15
Goodwin	1,060 0
Metstead	1,072 0

NOTICES OF CONTRACTS.

[We are compelled by the interference of the Stamp Office to omit the names of the parties to whom tenders, &c., are to be addressed. For the convenience of our readers, however, they are entered in a book, and may be seen on application at the office of "The Builder," 2, York-street, Covent-garden.]

For the erection of the Maningtree station, and for the stations and lodges at Bentley and Ardleigh, for the Eastern Union Railway Company.

For the erection of the Monastery of the Holy Trinity, near Market Weighton.

For the erection of a lighthouse of Portland stone at Shoreham.

For stone pitching the yards of the Union Workhouse at Caxton with pebbles. There are about 1,100 square yards to be done.

For the execution of the works of the Churwell contract for the Leeds, Dewsbury, and Manchester Railway Company, being in length of about 2½ miles.

For the execution of the works of the Dewsbury contract for the Leeds, Dewsbury, and Manchester Railway Company, being a length of about 3½ miles.

For the supply of 100 wrought-iron bedsteads for the Portsea Island Union.

For the erection of a Tennis Court at Leamington.

For the execution of various works on the Caledonian Railway.

For the supply of the 1,000 tons of blue Guernsey granite, of the best and hardest quality, to the trustees of the Middlesex and Essex turnpike-roads.

For the supply of coke for one, two, or three years to the Manchester and Leeds Railway Company.

For the supply of 150,000 sleepers to the Midland, Nottingham, and Lincoln, and Syston and Peterborough Railway Companies.

For the execution of three several contracts on the South Wales Railway, being a distance of about 14 miles, and comprising tunnels and a large amount of earth work.

For the supply of 35,000 slow-grown larch sleepers to the Manchester South Junction and Altringham Railway Company.

For the execution of the alterations on the Kilmarnock and Troon Railway.

For the supply of 20 six-wheeled locomotive engines and tenders, of first-rate power and workmanship, to the Midland Great Western Railway of Ireland.

COMPETITION.

The Directors of the Eastern Union and Ipswich and Bury St. Edmunds Railway offer a premium of 100 guineas for the most approved plan and estimates of a joint passenger and goods station at Ipswich; and a further premium of 50 guineas for the next best.

APPROACHING SALES OF WOOD, &c.

BY AUCTION.

At the Methuen Arms Inn, Corsham, Wilts: A large number of valuable oak, ash, and elm timber trees, of unusual dimensions and clean growth.

At the Red Lion Inn, Worksop: A large quantity of very valuable oak, larch, elm, and beech timber trees now standing.

At Cob's Wood, Wimpole: About 12 acres of capital underwood, from 18 to 20 years' growth, and a quantity of ash poles.

At Chilton-street, Clare, Suffolk: 310 very superior larch, fir trees from 40 to 60 feet in length and of 35 years' growth.

At Eye, Suffolk, 90 Willow, Poplar, Oak, Ash, and Sycamore timber trees, of good dimensions, and 1,000 Spruce, Larch, Ash, Oak, and Elm stands and poles, of thirty years' growth.

At the Rose and Crown Inn, Nether Stowey, Somerset, 500 Maiden Oak, 129 Maiden Ash, and 120 Elm timber trees, now standing, they are of large dimensions and excellent quality.

At Novar, Ross-shire, upwards of 10,000 Scotch Fir timber trees, now standing and fit for railway purposes.

At Great Barton, near Bury St. Edmunds, between 1,100 and 1,200 Larch and other Firs; a few useful Beech of thirty years' growth, &c.

At Hull, a cargo of Larch and Scotch Fir poles.

At Mistley, Essex, an extensive assortment of Oak, Ash, Elm, and soft-wood timber.

At the Union Arms Inn, Child Okeford, Dorset, 41 very superior maiden Ash timber trees, now standing, &c.

TO CORRESPONDENTS.

"Lime Kilns."—*A country builder wishes to know "if any improvements have been made on the old dome kiln."*

"T. L. C." *must be a pupil before he can obtain a situation as clerk.*

"A Builder."—*We cannot venture to put a price on work we have not seen. Go to a surveyor.*

"T." *had better defer the consideration of the other forms.*

"W." (Hoxton).—*The tenant can remove them.*

"Clement."—*We will look to the building named.*

"F. Mulholland" *has our thanks.*

"Volens."—*The sketches sent are too slight for our purpose. We should be glad to have "geometrical drawings of the stone pulpit."*

"W. H."—*For the forcing pit recently formed in the garden of a house, as described (admitting the pit to be a "building,") the district surveyor should not claim a larger fee than ten shillings.*

"Bronzing."—*A correspondent asks for the particulars of a bronze wash for gas-fittings, and directions for its use.*

"E. S."—*In the absence of information, we are compelled to decline the drawing with thanks.*

"T. I. M."—*Declined with thanks.*

"J. C. W." *shall appear.*

"T. J." (Norwich.)—*Address the secretary, Mr. James F. Saunders, Eastern Union Railway, Ipswich.*

Next week. — "F. W. A.," "W. A. L."

Received.—"Your Old Subscriber," "M. A.," "W. P. S.," "Young Architect," "W. Dredge," "P. C. Alderton;" "South Australian Papers," "The Archæological Journal," "Pictorial Gallery of Arts," Part XIII.; "Old England's Worthies," Part II.; Machinery as it affects the Industrial Classes," by W. Carpenter; "The Art-Union," No. 91; "The Year Book of Facts," 1846 (Bogue, Fleet-street); "Statistics and Calculations connected with Railways, &c.," by S. Salt (Bradshaw and Blacklock, Fleet-street).

ERRATA.—In the "Foreign Intelligence" last week it was stated that there was no English work on Diocletian's palace at Spalatro (mis-printed Spalato). There is, however, a noted work on this building by Adams.—In the first page of advertisements last week, the address of Mr. J. Thomas, architect and surveyor, is stated to be 47, Blackman-street, *Bow*, instead of *Borough*.

*** Correspondents are requested to address all communications to the EDITOR, York-street.

ADVERTISEMENTS.

TO ARCHITECTS, BUILDERS, AND THE PUBLIC IN GENERAL.

C. DEBAUFER and SON beg to call the attention of architects, builders, &c., to their general assortment of Gas Lamps, Pendants, Hydraulic sliding Pendants, Gas Brackets, Pillars, and every article connected with gas apparatus, at their Manufactory and their Rooms, 10 and 11, Creed-lane, Ludgate-street.—A liberal discount allowed to architects and builders.

FINE ARTS.

By Her Majesty's Royal Letters Patent.

LORIMIER'S TRANSPARENT PLANES for Perspective Drawing; BENJAMIN WEST, Patentee.

"This Instrument will enable Artists and others to make any Drawing, whether from Nature or Models, in perfectly true perspective, so that a likeness or landscape may be taken in a few minutes absolutely perfect. It is used by her Majesty's Royal Sappers and Miners, Chatham. To Travellers it would be found serviceable, since it can be employed without the knowledge of drawing."—*Art Union.*

Price 18s. and 26s. Apply for Agents to BENJAMIN WEST, 2, St. James's-walk, Clerkenwell.—Sold by BARRITT and Co., 178, Fleet-street, London; GRIFFIN and Co., Glasgow, and by all Fancy Stationers, &c.

POLONCEAU'S BITUMEN PAVEMENT for paving Foot walks, Terraces, Garden walks, Stables, Coach Houses, Granaries, Corn Stores, and Salt Warehouses. For the exclusion of Damp and Vermin in Basements it is particularly adapted, and for Roofing Dwelling Houses, Porticos, Balconies, and Sheds.

Price 3s. 6d. per square yard.

BITUMEN for covering the Arches of Bridges, Culverts, &c. &c. on Railways and other places (with instructions for laying it down), may be had at the rate of 45s. per ton, by applying to JOHN PILKINGTON, 15, Wharf-road, City-road.

TO ARCHITECTS.

IN consequence of many complaints having been made to the Company, by Architects, of a spurious material having been used in the execution of Works where the SEYSSEL ASPHALTE had been specified for, the Directors, with a view to ensure the fulfilment of any such specification, have authorised CERTIFICATES to be granted to Builders where the

SEYSSEL ASPHALTE

has been used. For the purpose of securing the use of the Genuine Article, Architects and others are recommended to insert in their specifications the "Seyssel Alphalte, Claridge's Patent," and not merely "Asphalte," or "Bitumen," as in many cases where these terms have been used, gas-tar and other worthless and offensive compositions have been introduced.

I. FARRELL, Secretary.
Stangate, near Westminster Bridge, Jan., 1845. Seyssel Asphalte Company.

Books of Instructions for Use may be had at the Office of "The Builder," and of all Booksellers in Town and Country, price 1s.

*** In proof of the necessity of the above advertisement, it may be mentioned, that it has come to the knowledge of the Directors, that in certain works which have been executed by Messrs. CURTIS, builders, of Stratford, a spurious material has been used by them, contrary to the specifications, which expressly mentioned, that "Claridge's Asphalte" was to be used.

Also in the case of a work at Lewisham executed by Messrs. ROBERT and DANIEL YOUNG, of 10, Crown-row, Walworth-road, where Seyssel Asphalte as specified for, a spurious article was nevertheless laid down by them.

WALLIS'S PATENT LIQUID WOOD KNOTTING. — This newly-discovered Liquid Composition which Messrs. Geo. and Thos. Wallis have the satisfaction of introducing to the trade, possesses the important qualification of effectually stopping Knots in Wood, however bad, and preventing them eating through and disfiguring the paint above.

Many substances have been used and much time spent in endeavouring to find a cure for a bad Knot, but hitherto without success. Messrs. Wallis therefore feel much pleasure in offering to the public an article so long and anxiously called for.

In the application, skill is not required; a boy can use it as well and effectually as the best workmen: it is put on to the work with a brush like common paint, can be used in all climates and situations, and does not require heat.

Sold wholesale and retail, by Messrs. G. and T. Wallis, Varnish, Japan, and Colour Manufacturers, No. 64, Long Acre. Price 20s. per gallon.

STEPHENS'S LIQUID OAK, MAHOGANY, ROSE, and SATIN WOOD STAINS, for Staining various sorts of Inferior Woods, so as to give them the appearance and character of the more costly and ornamental kinds; also for reviving the natural colour of Wood Carvings and Panellings, and other ornamental Wood Work, when such has become faded from age or other causes.

IN THE BUILDING AND DECORATING NEW CHURCHES, where it is desirable to give to the cheaper kind of Woods the appearance of Antique Oak, or to make Deal assume the character of Oak Panelling, whereby the effect of the more costly may be produced by the use of a cheaper material, these Stains will be found more effective than any means hitherto employed.

IN OLD MANSIONS AND HALLS, where the Wood Carvings and Panellings have faded, the application of these Stains will be found to revive and bring back the rich natural colour, and which colour may be varied from the lighter to the deeper shades of the most Antique Oak.

The BIRCH WOOD, which has a fine natural grain, with little colour, is particularly suited to the application of these Stains; and the appearance which it assumes after Staining is so near that of the natural wood, that is is only when the grain and colour of the latter is particularly fine that it is preferred. Beech, Birch, Elm, Ash, and other Woods, English and Foreign, receive the Stains and produce various imitations.

For the exposed Timbers of the inside of the ROOFS of CHURCHES, for which north country Timbers and Deals are generally used, by brushing them over with the Stain, which operation is very rapidly, and of course economically, effected, the appearance of an Oaken Roof will be produced. For colouring the backs of the Seats, Pews, the fronts of Galleries, the Pulpit, &c., it is equally advantageous.

Prepared by HENRY STEPHENS, and may be obtained at 54, Stamford-street; of Mrs. ROWLAND, Painter and Glazier, 3, Broad-street, Golden-square; and at the Office of "THE BUILDER," 2, York-street, Covent-garden, at which places specimens of their application may be seen.